



International Society of City and Regional Planners

**Frontiers of
Planning**

**ISOCARP
Congress
2013**

**BRISBANE
Australia
1-4 October**

Evolving and Declining Models of City Planning Practice

Proceedings of the 49th ISOCARP Congress

Brisbane, Australia, 1-4 October 2013

Frontiers of Planning - Evolving and Declining
Models of Planning Practice



ISOCARP

Knowledge for better Cities

International Society of City and Regional Planners
Association Internationale des Urbanistes
Internationale Gesellschaft der Stadt- und Regionalplaner
Asociación Internacional de Urbanistas

**Proceedings of the 49th ISOCARP Congress
Brisbane, Australia, 1-4 October 2013
Frontiers of Planning - Evolving and Declining
Models of Planning Practice**

Editor: Jeffrey Featherstone

©ISOCARP 2013

Produced and published by ISOCARP

ISBN: 978-94-90354-22-0

Cover picture: ©Brisbane Marketing

Authors are responsible for the content
of the short outlines and the full papers.

Authors are listed in alphabetical order in each workshop.

ISOCARP Head Office

P.O. Box 983
2501 CZ The Hague
The Netherlands
Tel: +31-70-346-2654
Fax: +31-70-361-7909
isocarp@isocarp.org
www.isocarp.org

Contents

Short Outlines of Congress Proceedings	3
Track 1: Migration as the New Face of Change	24
Track 2: Valuing What Already Exists	334
Track 3: Community and Stakeholder Engagement	751
Track 4: International Planning Exchange	995
Track 5: Forum on Planning Education: Are we doing it right?	1431
Joint ISOCARP Planning Institute of Australia (PIA) Day	1511



**Frontiers of
Planning**

**ISOCARP
Congress
2013**

**BRISBANE
Australia
1-4 October**

Track 1: Migration as the New Face of Change

Co-Chairs: Amos Brandeis, Israel; Njeri Cerere, Kenya

Adebayo, Ambrose Adeyemi, University of KwaZulu Natal, Durban, South Africa

Urban built environment in an era of uncertainty: migration, urban planning and housing policy in South African Cities

Cross border migration in the case of South Africa, has been met with a lot of resistance from the host country, with the poor ending up as refugees. This paper will evaluate the implications on South African cities' built environment and of policy interventions in place to address the issues outlined above.

Chatterji, Tathagata, University of Queensland, Brisbane, Australia

Participatory planning in the era of public-private-partnerships: complexities and contradictions in a migrant city in India (peer-reviewed)

This paper explores the role of planning in bridging the gap between local rural residents and new urban middleclass and poor migrants in the context of globalisation.

Chen, Xiaojian; Li, X.Y; Ding, N., Xi'an University of Architecture and Technology, Xi'an, China

The models of urbanization and their impacts on spatial evolution of built-up areas - Case studies of cities in Shaanxi in Northwest China

Large-scale demographic changes driven by migration have different effects on the spatial evolution of cities with different scales and different development conditions. This paper discusses the effectiveness and lessons derived from the implementation of city planning in these three units and takes Xi'an, Yulin and Ankang separately as examples.

Gonçalves Garcia, Marina; Vasconcellos Garcia, Antônio Jorge, Universidade do Vale do Rio dos Sinos, Porto Alegre, Brazil

Sustainable urbanism in coastal environment: an applied project to expanding urbanized zone of Aracaju City, Sergipe, Brazil (peer-reviewed)

This paper presents partial results of geo-science multidisciplinary studies applied to coastal environments and its usefulness in terms of a proposal for sustainable urban development in the expansion of the city of Aracaju, capital of the State of Sergipe, in the northeast of Brazil.

Heyning, Helena Chaya, MB&A BV, Amsterdam, the Netherlands

Design for shrinkage – Generating new opportunities and wealth

Shrinkage accompanied by economic, social and spatial decline also offers new possibilities. Identifying ones opportunities is incredibly important as is sustained and multi-annual community and stakeholder engagement.

Klinmalaj, Siwaporn; Kanki, Kiyoko, Kyoto University, Kyoto, Japan

Impact of different land use transformation on neighborhood relationship between newcomer and former villagers in a sprawl area of the Bangkok Metropolitan Region: the case of Nonthaburi and Pathumthani province in comparison, Thailand

Nonthaburi and Pathumthani province are experiencing a dramatically high population growth among five vicinity areas of the Bangkok metropolitan region with an uncontrollable growth of population. This condition has impacted different land use transformations and also affected different neighborhood relationships between the former village inhabitant in an agricultural area and the newcomer in a new residential area.

Lv, Yuan; Liu, Kewei; Liu, Lin; Zhao, Dan; Zhang, Fujuan, Northwest University, Xi'an, China

Problems and strategies of urbanization development in Western China from the perspective of urban-based society - A case study of Shaanxi Province (peer-reviewed)

Serious problems in the urbanization process of western China are raised from the perspective of the urban-based society, taking Shaanxi, a well-developing and typical province in natural geographical features in western China as a case. Strategies to solve these problems are put forward.

Mitra, Sheuli; Mitra, Tapas, School of Planning and Architecture, Bhopal, India; Chatterjee, M., Bardhan, S., Jadavpur University, Kolkata, India

Conflicts in land and housing markets in Kolkata: Emergence of a divided city

This research investigates reasons of conflicts between social sustenance and economic viability of urban housing projects in Kolkata, India. It traces the transition of housing from social sector to private sector, and its impact on urban land markets, which has consequently resulted in the emergence of a divided city.

Monardo, Bruno; Falco, Enzo; Polizzi di Sorrentino, Enrica; Boca, Alessandro; Ferretti, Alessia, Sapienza – Università di Roma, Rome, Italy

Urban agriculture as a socially inclusive and sustainable post-growth urban regeneration strategy

The experience of “New Roots Community Farm” within the distressed neighborhood of City Heights in San Diego shows how the “Urban Agriculture” approach can provide new integrated strategies for urban regeneration matching social inclusion and physical-economic redevelopment.

Perry, Guy, IN-VI, Warsaw, Poland

Planning for health and sustainability (or low fat cities)

The way in which our cities expand impact, not only on environmental sustainability, but on human health. Increasingly, current physical living patterns in transition economies make it challenging for humans to lead healthy and balanced lifestyles. Brazilian and Polish developments strive to keep their cities and their inhabitants lean.

Qin, Meng Di; Liu, Guan Peng, Tongji University, Shanghai, China

Strategies on improving the attraction of small towns in China, solving problems caused by migration

This paper explores advantages and disadvantages of small towns and cities in China, with the goal to enhance the attractiveness of small towns. It suggests that small towns should be concerned with being attractive, so that they can contribute to relieving various pressures on big cities caused by migration.

Shao, Dan; Mu, Ye, China Academy of Urban Planning and Design, Beijing, China

Planning practices coping with migration in a backward area in Western China: A case study of Liupanshui City, Guizhou Province

The rise of cities in western China is usually based on mineral resources under government intervention. The population migration shifts from net inflow to a concurring situation of aggregation of city and net outflow of region. Planning practices face challenges from expanding the scale of the city to blending into the region.

Wang, Fei; Wei, Wei; Li, Ming, China Academy of Urban Planning and Design, Beijing, China – presented by Shao, Dan

Equalization of public service facilities for tourist cities - Case study of Sanya's downtown public service facilities in the planning

Providing countermeasures to achieve the equalization of public service facilities in Sanya from contraposing its periodic variation of a population.

Zhang, Danming; Dong, Anrong, Tsinghua University, Beijing, China

Estimation of water resource capacity of Chinese cities for facing the challenge of future urbanization

This paper estimates the water carrying capacity of Chinese cities and major megalopolises and intends to offer future urbanization suggestions by considering issues in water aspect

Zhou, Yajie; Wang, Tinglin, China Academy of Urban Planning and Design, Beijing, China

Research on the migrant personnel flow's influence on the urban planning: Case study of Beijing and Xinyang city

China's migrant personnel flow will have a significant influence on both the migrant destination city and the home city. This paper takes Beijing with a large number of immigrants and Xinyang with a large outflow of population as the research object, to study the migrant personnel flow's impact on urban planning.

Zhu, Jin, Tongji University, Shanghai, China

Issues and solutions on the development of new towns in Shanghai from the view of migration and social structure transition

The boom of suburban centers and the recession of new towns are closely related to migration. This paper discusses the issues and solutions on development of new towns in

Shanghai by analyzing the migration and social structure transition process. The causes of the problems are clearly illustrated.

Track 2: Valuing What Already Exists

Co-Chairs: Silja Tillner, Austria; Belinda Yuen, Singapore

Alwehab, Abdelwehab, University of Baghdad, Baghdad, Iraq

Utilization analysis of Baghdad City urban waterfront

Urban waterfronts are vital components of the urban landscape for cities with such areas. A survey of land uses along the waterfront of the city of Baghdad clearly indicates underutilization, which constitutes a social and economic loss to citizens.

Ayangbile, Oluwabukola; Abiodun, Oluwafisayo, University of Ibadan, Ibadan, Nigeria

Cultural heritage planning and preservation in Yoruba cities: Case study of Ile Ife, Nigeria

This paper examines how heritage places and spaces are protected and managed to enhance historical artifacts in Ile Ife, the 'Cradle of Humankind'. It suggests traditional historical planning tools as a re-vitalization planning strategy to preserve, manage and protect the sacred groves, monuments, traditional and religious landmarks that already exists.

Chang, Hsueh-Sheng; Chen, Tzu-Ling, National Cheng-Kung University, Tainan City, Taiwan

Based on mitigation and adaptation viewpoint in water sensitive city - A case study in serious land subsidence area in Yunlin, Taiwan (peer-reviewed)

A coupling model of urban water balance on land use change can analyze the relationship between land use development, anthropogenic activities and water cycling, and further simulate different scenarios to propose appropriate land use patterns while achieving water safety, water satisfaction, and water environment communities.

Cillers, Elizelle Juane; de Jong, Nicolene, North West University, Potchefstroom, South Africa – presented by Bernice van Schalkwyk

Planning for lively spaces: adding value to old spaces (peer-reviewed)

Lively planning concept implemented in two case studies in an attempt to enhance the value and function of the old spaces.

Fattahi, Sara, Apadana Institute of Art and Architecture, Shiraz, Iran; Bazrkar, Mojtaba, Freelance Translator, Shiraz, Iran

From Garden City to City in a Garden (Case study: Shiraz city as a 'Permaculture' model in Iran)

In new urbanization, some gardens and open spaces have been destroyed in Shiraz, Iran, during the development of the city. Converting Shiraz city to a model of "Permaculture" and increasing green spaces in Shiraz by roof gardening is discussed in this paper.

Grant, Paula, University of Southern Queensland, Toowoomba, Australia

Old neighbourhoods showcasing new urbanist principles to promote walking for transport (peer-reviewed)

The built environment shapes our transport choices and has a significant impact on the environmental, economic and social wellness of communities. This paper shows that older urban neighbourhoods have displayed the compactness, connectivity, density, lot layout and land-use mix to be walkable long before the term new urbanism was coined.

Greenop, Kelly; Darchen, Sebastien, University of Queensland, Brisbane, Australia

Brisbane's urbanism: looking for an identity. Case study of Inala (peer-reviewed)

The objective of this paper is to create avenues of reflection on how to enhance the identity of urban spaces in Brisbane. We base our analysis on the Inala case study.

Goledzinowska, Anna, Gdansk University of Technology, Gdansk, Poland

Development policy or palliative therapy? Investing in the quality of public spaces in the distance from large urban centers (peer-reviewed)

The paper refers to two main issues: 1) the phenomenon of an extensive network of medium-sized towns in Poland 2) effectiveness of investments in the quality of public spaces as a tool stimulating social and economic development.

Gu, Zongpei, China Academy of Urban Planning and Design, Beijing, China – presented by Wei, Gang

The understanding of Beijing cultural spaces

Protecting and re-using cultural spaces is one of the most important issues during Beijing's development. A comprehensive understanding of the present situation of cultural spaces in Beijing is examined by mapping the spatial distribution of Beijing's cultural resources. More importantly, downfalls behind the current situation in Beijing are analyzed.

Gunay, Zeynep, Istanbul Technical University, Istanbul, Turkey

Renewal agenda in Istanbul: Urbanisation vs. urbicide

The paper intends to discuss how the large-scale property-led renewal schemes, which have been employed as an evolving model in resolving the "urbanisation" problem, are turned into the instruments of "urbicide" in Istanbul as a political evolving model of urban destruction.

Herron, Murray; Jones, David; Rollo, John, Deakin University, Williamstown, Australia

South West Victoria 2012 – 2050: Are the settlements sustainable? (peer-reviewed)

Regional sustainability in Victoria. Is it possible?

Kammerbauer, Mark, Technical University Munich, Munich, Germany

Adaptive strategies of urban disaster recovery planning (peer-reviewed)

Contradictions between recovery planning and urban master planning emerged in New Orleans after Hurricane Katrina in 2005. The Citywide Recovery Plan had to support rebuilding, while the 2030 Masterplan advocated growth and improvement. What role do existing conditions and the scale of disaster play for this process?

Langley, Joseph, SKM, St. Leonards, Australia

New funding options for urban regeneration

The traditional means of funding urban regeneration are proving to be inadequate as cities struggle to rebuild obsolete infrastructure while responding to changing demographic, housing and employment trends. New funding options are needed which share the value created by the public's investment in urban infrastructure.

Ledwon, Slawomir, Gdansk University of Technology, Gdansk, Poland

Valuing service and retail structures in core areas of cities

The paper describes the methodology to evaluate service and retail structures in cities in relation to their spatial form and possible future changes.

Liu, Yang, Tongji University, Shanghai, China

The dynamics of historic districts and the effectiveness of the historic conservation plan - Case study of Shanghai (peer-reviewed)

This research is about the effectiveness of the Historic District Conservation Plan in Shanghai. By focusing on the changes that happen before and after the implementation of those conservation plans, this paper reveals the advantage and disadvantage of those plans and the causes of the problems.

Magni, Peter, University of Cape Town, Johannesburg, South Africa

Strategic spatial planning's role in guiding infrastructure delivery in a metropolitan municipality context: The case of Johannesburg (peer-reviewed)

Strategic spatial plans have been used with limited success to guide infrastructure provision. The paper reviews the example of the City of Johannesburg where processes and mechanisms have been implemented to this effect highlighting tensions future visions and the reality of existing infrastructure networks.

Mitra, Tapas; Mitra, Sheuli, School of Planning and Architecture, Bhopal, India

Delineation, transformation assessment and intervention initiatives for 'Grey zones' of Kolkata, India (peer-reviewed)

This paper focuses on the aspects of dynamics of change in older residential areas of Kolkata, India, which do not necessarily qualify as 'heritage districts' and presents a rapid appraisal tool to initiate processes of developing design intervention strategies.

Moreira, Inês, CIAUD – FAUTL, Lisbon, Portugal

Expansion and abandonment: The urban duality in planning metropolitan Lisbon (peer-reviewed)

The paper approaches the expansion and abandonment of urban areas related to the presence of economic activities in metropolitan Lisbon, generated by the growth of the tertiary/quaternary sector and by the process of deindustrialization, by discussing their determinant factors, the policies and plans that have shaped them.

Murphy, Melissa, Norwegian University of Life Sciences, Oslo, Norway

Reading conflicts and congruencies in the built environment (peer-reviewed)

The results of urban planning and management are difficult to assess due to complexity and external factors after projects are built. The built environment can be read as a mitigation between past plans and current life. Tracing resident behavior through physicality can illuminate local conflicts and intention vs. implementation data.

Ren, Jie, Tsinghua University, Beijing, China

Siting green infrastructure: Synthetical solutions for leading the oasis city's sustainable development in Wuyi New Town

Owing to the particular conditions of oasis cities, the stability and security of the ecological environment seem to be quite crucial especially when dealing with urban sustainable development. This study showcases how Wuyi new town constructed its sustainable developing strategy by the solution of green infrastructure.

Sas-Bojarska, Aleksandra, University of Technology, Gdansk, Poland

The green waterfront of a city – where are the limits of good planning? Gdansk case

The paper presents the role of strategic planning of green areas of waterfronts in shaping the image of cities, and the threats to them caused by wrong planning decisions. The case study of Gdansk serves as an example to illustrate the potential of the sea-shore landscape and its possible degradation.

Thomas, Stacey, University of the West Indies, Diego Martin, Trinidad and Tobago

The Future is urban: The challenge for sustainable urban development in the Caribbean: The search for a sustainable urban form

Increasing urban populations coupled with the peculiarities of the Caribbean urbanization process, leave governments and policy makers grappling with how to manage and guide future urban development in a sustainable manner. Will densification, decentralization or a mixed urban form be the way forward?

Vaillant, Philippe, Université de Lorraine, Charleville-Mézières, France

Mining, environment and society: Contribution of the thought of Whitehead to the methodology of assessing the water that can really be mobilized in the Kimberley and Canning Basin, Australia

The Kimberley, one of the last pristine areas in the world, is subject to strong mining and gas pressure. The study, conducted with the Nyikina people and the International Water Centre in Brisbane, raises in a dialogic and organic way the issue of water resources that can be mobilized.

Van Zyl, Pieter, Western Cape Provincial Government, Cape Town, South Africa

Cape Town's V&A waterfront project adaptive re-use as a foundation for sustainable urban renewal

An overview of the V&A Waterfront Project in Cape Town, South Africa, describing how the new residential, commercial and leisure uses have been developed through adaptive re-use of harbour buildings and retaining the working harbour elements. An innovative “Package of Plans Process” facilitated the urban regeneration success story.

Vettorato, Daniele, European Research Academy, Bolzano, Italy

Smart City: the energy strategy of Bolzano transforming the existing city

The paper describes the opportunities, the strategies, and the synergies of the Bolzano Smart City concept.

Wei, Gang; Jiang, Zhaohui, China Academy of Urban Planning and Design, Beijing, China

Analysis of the spatial characteristics of commercial streets in China's Southern cities: A case of three commercial streets in SuZhou

Characteristic commercial streets are an important way to physically display the characteristics of cities. Based on a factual investigation on three characteristic commercial streets in SuZhou, this paper analyzes the space attributes and positive effects of the characteristic commercial streets, and aims to provide recommendations on building characteristic urban spaces.

Yang, Zhi; Hu, Haibo; Wang, Haiyong, Jiangsu Institute of Urban Planning and Design, Nanjing, China

Coordinating strategy of preserving the local identity during the rapid urbanization in China: Case study of three towns in the South of Kunshan (peer-reviewed)

This paper is aimed at exploring how to preserve the local identity as well as achieve the economic development during rapid urbanization. By the method of comparative analysis and evaluation, the coordinating strategy in historical conservation redevelopment, integrating space and policymaking has been proved to be effective.

Yuan, Lin, Tsinghua University, Beijing; Yuan, Lin, North China University of Technology, Beijing

Problems and countermeasures of Dujiangyan agricultural area protection during the rapid urbanization in Chengdu

To protect the Dujiangyan agricultural area during rapid urbanization in Chengdu, the paper suggests reiterating the 'traditional Dujiangyan watershed area' in the Qing Dynasty, strictly limiting urban growth within this range, and demarcating 'Dujiangyan Essential Agricultural Heritage Areas' to protect the farm land, human settlements, watershed and traditional culture comprehensively.

Yuen, Belinda, Singapore University of Technology and Design, Singapore, Singapore

Eco-city planning: pure hype or achievable concept

This paper will interrogate the key strategies, results, lessons learned and replicability of Singapore's eco-city planning. The analytical lens is on illuminating the strengths and weaknesses of eco-city planning – what has worked, what may work and what may fail elsewhere.

Zhao, Ye; Wang, Jianguo, Southeast University, Nanjing, China

The evaluation and improvement method of waterfront urban landscape - the case of urban landscape planning for West Lake in Hangzhou, China (peer-reviewed)

This paper takes West Lake as example, tries to find out both ways of adjustment from the respects of viewer and landscape, and proposes some thoughts on the design method.

Track 3. Community and stakeholder engagement

Co-Chairs: Warren Batts, Australia; Pietro Elisei, Italy/Romania

Baldwin, Claudia; Osborne, Caroline, University of the Sunshine Coast, Peregian Beach, Australia; Smith, Phil, Deicke Richards Architects, Brisbane, Australia

Planning for age-friendly neighbourhoods

This paper provides insight into two research projects: a desktop exercise investigating trends in international aged care provision and a participatory research project using PhotoVoice and design charrettes to ask seniors in South East Queensland about their preferences for neighbourhoods and housing.

Burton, Paul, Griffith University, Southport, Australia

Still climbing the stairway to heaven: public participation in planning

Arnstein's seminal conception of a ladder of participation continues to exercise the imagination of planners and to confound us by its assumption of a moral dimension whereby

climbing the ladder takes us closer to participatory heaven. This paper proposes other criteria with the potential to improve the practice of participation.

De Souza Tenorio, Gabriela, University of Brasília, Brasília, Brazil

The danger of community engagement as an exclusion tool - four case studies in four different scales in Brasilia, Brazil

The necessary community engagement must be put into perspective. Most individuals have difficulty to think in a systemic, global way, while contributing to their cities' planning processes. In all intervention scales, it is very hard to have inclusive contributions without previous education on the global implications of their local desires.

Heyning, Helena Chaja, MB&A BV, Amsterdam, the Netherlands; van der Bruggen, Wilma, LOGOS, Oosterbeek, the Netherlands

From top down to bottom up -a somersault?

Faced with the financial and economic crisis in The Netherlands and its aftermath and the ongoing decentralization process municipalities have great difficulties to cope with the demands and needs of citizens. Housing and planning are in the heart of the financial problem.

Heywood, Phil, Queensland University of Technology, Brisbane, Australia

Collaborative Planning: an evolving model of practice

As individuals, groups and activities are brought into ever-closer contact by radical developments in communication, opportunities for both conflicts and cooperation multiply. Making use of examples, this paper examines the role, scope and methods of collaborative planning as a means to build better futures in times of rapid change.

Karakiewicz, Justyna, The University of Melbourne, Melbourne, Australia

Societal paradigm shift and community (peer-reviewed)

For years now, we have been responding to the discovery of the profoundly disturbing consequences of climate change with evolutionary responses. Collective behavioural change is needed. But how do we make dramatic changes that bring the larger public over to such change and result in a societal paradigm shift?

Layson, Paulo; Nankai, Xia, Tongji University, Shanghai, China

Integrating community participation in urban redevelopment projects: Comparative study of Dar es salaam, Tanzania and Tianzifang Shanghai, China

Community participation in urban redevelopment projects is one of the key success factors to ensure sustainability of redevelopment projects. Here is a study on community initiated urban redevelopment projects in Tanzania and China as a Case study.

Le Roux, Jan-Hendrik; Cilliers, Elizelle Juane, North-West University, Potchefstroom, South Africa – presented by Louis Latagan

The participatory planning paradigm shift: Comparing disciplines and methods (peer-reviewed)

Public participation has experienced a paradigm shift over time with contrasting approaches emerging from it. These approaches are visible in different professions and disciplines. By comparing different disciplines it is possible to create best-practice scenarios for effective public participation.

Li, Fengqing; Huang, Huang, Tongji University, Shanghai, China

The 'three-old' policy of community renewal in China: Based on cases in the Pearl River Delta Region (peer-reviewed)

This paper studies the community renewal under the “Three-old” policy since 2009 in the Pearl River Delta, which is widely considered as the origin of community engagement in China.

Liu, Tao; Liu, Zhian, Urban Planning Institute of Yunnan Province, Kunming, China

Mobilizing social capital in low developed rural China: a case study in a village

Social capital is an important concept of endogenous regional development. Currently, the difficulty of improving local governance in China has aroused a great deal of attention from academics. The contribution presents the difficulty to mobilize the social capital and the difficulty of the participation in low developed rural China.

Lorens, Piotr; Kamrowska–Zaluska, Dorota, Gdansk University of Technology, Gdansk, Poland

Spurring the community involvement in planning - lessons from post-socialist cities

Community involvement in planning in case of post-socialist cities was until recently almost non-existent. But in recent years the development of demand for more public participation is dramatically increasing. This needs the creation of new types of planning tools as well as the introduction of innovative techniques of conducting the community dialogue.

Mchunu, Koyi, Town and Regional Planning, Durban, South Africa

'Insurgent' Spaces in Durban: An investigation on the proliferation of religious sites for the Nazareth Baptist Church

Planning in the context of diversity, temporaneous nature of uses poses numerous challenges.

Meenar, Mahbubur; Featherstone, Jeffrey; Mandarano, Lynn; Olszack, Brian, Center for Sustainable Communities, Temple University, Ambler, U.S.A

Effective community engagement tools in watershed plans: Examples from the USA (peer-reviewed)

This paper will discuss the typology of various “community design” tools used in USA-based watershed plans.

Monardo, Bruno; Ferretti, Alessia; Boca, Alessandro; Falco, Enzo; Polizzi di Sorrentino, Enrica, Sapienza Università di Roma, Rome, Italy

Innovative PPP tools supporting urban regeneration: the role of non-profit organizations in USA

Reflections are focused on innovation in PPP tools within urban regeneration policies in US through the flexible geometry of non-profit organizations and the changing role of municipal governments. How partnership models can work within the rising lack of public resources? To which extent and effectiveness?

Owei, Opuenebo; Ede, Precious; Brown, Ibama, Rivers State University of Science And Technology, Port Harcourt, Nigeria

Developing the new Port Harcourt City and community and stakeholder engagement: Lessons of experience

The study focuses on the methods of stakeholder and community engagement employed by the Greater Port Harcourt City Development Authority in trying to implement its vision of creating a world class city with modern infrastructure such that will attract investment, tourists and improve the well-being of the people.

Powell, Marissa, Arup, Brisbane, Australia

Online engagement – linking their digital world to ours

See how bespoke e-engagement/spatial mapping tools have been used to enhance stakeholder and community engagement processes for planning projects. This approach both broadens the reach of engagement programs resulting in more representative datasets and provides this data in formats that can be easily integrated into planning processes.

Prakash, Poonam, School of Planning and Architecture, Delhi, India

Legitimizing politics of influence through participatory planning practices in Delhi

The paper intends to explore how participatory processes are being used as a mechanism to co-opt technical expertise as well as legitimize real estate interests.

Torres, Yuri; Lucia Maria Sá Antunes, Costa, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Geo-social networks and the understanding of the dynamics of the city: the case of Rio de Janeiro’s boundaries of formal and informal neighborhoods

Geo-social networking reflects how cities are dynamic, while empowering the concept of social and collaborative involuntary creation drawn in the digital space. The overlapping of formal and informal boundaries within Rio de Janeiro can be mapped by that, raising discussions on how this data can become fruitful for planning practices.

Williams, Holly, University of Oregon, Eugene, U.S.A

Old town revitalization through innovative streetscape design

The revitalization of Portland, Oregon depends upon the addition of active streetscapes, which will shape the neighborhood into a center for prosperous community life.

Track 4 International Planning Exchange

Co-Chairs: Agatino Rizzo, Italy/New Zealand; Stanley Yip, Hong Kong

Arslanli, Kerem Yavuz, Istanbul Technical University, Istanbul, Turkey

Istanbul's changing skyline: The effects of landmark projects

After the 2002 economic crisis in Turkey the real estate market has evolved with respect to international globalization agenda. Istanbul, the biggest city of Turkey has been affected with many severe planning problems within last decade. This paper investigates the possible outcomes of the changing skyline of Istanbul with respect to planning future of the city.

Arthur, Martha Jillyan, the University of the West Indies, Arima, Trinidad and Tobago

The green economy: a strategic approach to sustainable urban development in Caribbean Small Island Developing States (SIDS)

Adopting a green economy approach in the Caribbean could provide a framework whereby decisions and strategies regarding cities and urban centres can promote resource efficiency, effective environmental management and a better standard of living for urban residents.

Beyazit, Eda, Istanbul Technical University, Istanbul, Turkey

The trilogy of power, politics and planning (peer-reviewed)

This paper understands socio-spatial inequalities in cities with reference to the trilogy of power, politics and planning.

Borja, Bij, JTC Corporation, Singapore, Singapore

2West Masterplan: A new paradigm in urban planning

The 2west Masterplan, an integrated mixed-use development, was conceptualized in response to the issue of land scarcity in the small island state of Singapore. One key feature of this development is the Integrated e-deck (Environmental Deck), an innovative system of multiple functions that redefines the concept of urban infrastructure.

Buitrago-Franco, Isabel; Chatterji, Tathagata, University of Queensland, St. Lucia, Australia

Planning for mining regions: building local government's capacity in a multi-stakeholder collaboration scenario (peer-reviewed)

The research draws attention to specific institutional deficiencies, in political and technological terms, which come in the way of the local agencies playing stronger role in a multi-stakeholder scenario in planning for mining regions, through case studies in Colombia.

Chakravarty, Surajit; Mansoori, Meera; Shehadeh, Meera, Alhosn University, Abu Dhabi, United Arab Emirates

What's Arabic for 'Charette'? Public participation in the Baniyas neighborhood of Abu Dhabi

The paper reports findings from the Baniyas Park public participation project in Abu Dhabi, UAE, conducted by the authors between August 2012 and May 2013. Recommendations based on the community input received are presented along with insights regarding substantive and procedural aspects of participation in contexts such as Abu Dhabi.

Cheng, Shang; Nankai, Xia, Tongji University, Shanghai, China

Village community: A planning practice of local-urbanization in countryside areas in Southwestern China

“Village community” aims to realize local urbanization, by constructing the new-style village in the countryside, which still locals in the countryside areas, but has fulfilled the same functions of the urban communities. As a result, villagers who live in the village communities are able to lead an urbanized life.

Dedekorkut-Howes, Aysin, Griffith University, Southport, Australia; Mayere-Donohue, Severine, Queensland University of Technology, Brisbane, Australia

Managing growth in the sunshine states: Urbanization and planning in Queensland and Florida (peer-reviewed)

This paper compares the urbanization and planning in the two sunshine states of Florida and Queensland highlighting the similarities and differences, evaluates how effective the growth management programs have been, and examines the recent changes and the challenges they bring to the respective states.

Espada, Rodolfo Jr.; Apan, Armando; McDougall, Kevin, University of Southern Queensland, Toowoomba, Australia

Using spatial modelling to develop flood risk and climate adaptation capacity metrics for vulnerability assessments of urban community and critical water supply infrastructure (peer-reviewed)

This study developed a new spatially-explicit analytical approach, identified as flood risk-adaptation capacity index/metrics-adaptation strategies (FRACIAS) linkage model, for urban flood risk assessment and generation of climate adaptation capacity metrics for assessing critical water supply network vulnerability.

Gezik, Peter, Slovak University of Technology, Bratislava, Slovakia

The role of social innovations in a revised urban metabolism concept framed by sustainable development paradigms

This paper presents the outputs of the research focused on a revision of urban metabolism conceptual framework, and a suggestion for a new approach considering social innovations as a key component shaping and redirecting metabolic processes and determining a city's sustainability.

Han, Jing; Kong, Lingyu, Tongji University, Shanghai, China

Interrelation between micro-blog hotspots and urban spatial network: An empirical analysis of Tongji-Rim intellectual-economic-zone, Shanghai, based on Sina Weibo (peer-reviewed)

This paper discusses the interrelationship between social network and urban spatial network. It takes creative people as target group and SINA micro-blog as platform. The basic concepts include projecting social network onto spatial network, testing spatial traits for explanatory power of social networks, and ranking levels of similarity.

He, Shan, University of Western Australia, Perth, Australia

From "insertion" to "incorporation": the Hangzhou example of the transformation of the railway in Chinese urban life (peer-reviewed)

This paper takes Hangzhou City as case study to review the relationship between rail and urban life in contemporary China. The conclusions illuminate today's practice of planning and design of new towns around station nodes of high-speed rail infrastructure.

Hua, Xiang; Hong, Liangping; Huazhong, University of Science and Technology, Huazhong, China

Greenway as a new path for the exploration of urban-rural coordinate based on a low-carbon model (peer-reviewed)

Based on the case study of Dongguan city in Guangdong province of China, this paper analyzes and concludes the specific role and contributions of Greenway Planning and Construction to coordinate the development of urban and rural differentiation with a new path of low-carbon model, and discusses its limitations further.

Jung, Wolfgang, Karlsruhe Institute of Technology, Karlsruhe, Germany; Buehler, Ralph, Virginia Tech., Alexandria, U.S.A

Sustainable transport in Germany and the US: A comparison of the Washington, DC and Stuttgart regions (peer-reviewed)

The Washington, DC and Stuttgart regions serve as examples for differences and similarities of the German and US systems of land-use and transport planning. We highlight best practice examples for sustainable planning in both countries using case studies of Scharnhäuser Park and Arlington County.

Lategan, Louis; Cilliers, Juaneè, North West University, Potchefstroom, South Africa

An exploration of the informal backyard rental sector in South Africa's Western Cape Province (*peer-reviewed*)

This paper examines the backyard sector in South Africa's Western Cape Province and examines why the sector remains largely unregulated and unaddressed whilst being recognised as a major component of SA's stock.

Lin, Dong; Allan, Andrew; Cui, Jianqiang, University of South Australia, Adelaide, Australia

Does polycentric urban spatial development lead to less commuting

This paper revisits the study of how employment's decentralization in metropolitan areas based on polycentric spatial structure development affects workers' commuting patterns and job accessibility.

Morgado, Sofia; Santos, João Rafael; Moreira, Inês; Vargas, José, CIAUD, Technical University of Lisbon, Lisbon, Portugal

Lisbon at a turning point: metropolitan patterns, trends and cultures

The paper presents the overall structure and preliminary findings of the research project Forms of metropolitan spatial production in Lisbon aimed at discussing recent metropolitan development, adding to previous research on its morphogenesis and comparative studies with other metropolises.

Musakwa, Walter, University of Johannesburg, South Africa; van Niekerk, Adriaan; Center for Geographical Analysis, Stellenbosch University, South Africa; Mbinza, Zenzile, Department of Town and Regional Planning, University of Johannesburg, South Africa

Developing an urban sustainability toolbox using earth observation data and GIS for monitoring rapid urbanisation in developing countries

Cities in most developing countries often lack data to manage rapid urbanisation. The use of earth Observation (EO) data and GIS are a proposed solution which can assist local authorities in managing rapid urbanization.

Ng, Waikien, National University of Singapore, Singapore

Towards a food sovereignty strategy for Singapore

This paper summarizes the proposals for island-wide multi-disciplinary spatial planning and design strategies that could help Singapore achieve a "total defence" approach towards a measure of food sovereignty during a crisis situation.

Nguyen, Dzung, CPG Consultants, Singapore

Size, shape and dispersion: Urban form evolution in Saigon River Basin and its impact on hydrologic performance from 1990 to 2000

This paper provides an empirical study of urban form evolution in terms of size, shape, and dispersion within 2540 square kilometers of Saigon River Basin and its hydrologic consequences during a 20-year period of rapid urbanization.

Okitasari, Mahesti; Kidokoro, Tetsuo, the University of Tokyo, Tokyo, Japan

Planning beyond the boundaries: Perspectives on the challenging intergovernmental collaboration towards a sustainable regional governance in Indonesia

This paper discusses the collaborative activity to regional scale based on Indonesian experiences. The study is to conceptualize, measure and compare cases of intergovernmental collaboration using a dimensional approach and comprehensive analysis of institutional structure transformation, fiscal power diffusion and policy review. A proposal to achieve sustainable governance is discussed.

Olajide, Oluwafemi, Newcastle University, Newcastle, United Kingdom

Poverty alleviation in Lagos urban informal settlements: A sustainable livelihood approach (peer-reviewed)

Through the lens of sustainable livelihood framework, this paper examines the issues of poverty in Lagos' informal settlements. It explores the interplay among location, tenure, settlements, policies and livelihoods, and how they interplay with livelihood vulnerability and access to assets, and the implications for poverty alleviation strategies.

Sarayed-Din, Luiza Farnese Lana; Ahmad, Faizah Binti; Zainol, Rosilawati Binti, University of Malaya, Kuala Lumpur, Malaysia

Rio de Janeiro's port area transformations for mega-events: history, urban regeneration and grassroots creative experiences (peer-reviewed)

Presenting Rio de Janeiro's port area urban regeneration for mega-events and how grassroots creative experiences have been handled and coped with. This paper advances in the urban regeneration discussion and potential of learning from creative urban experiences in inhabited historical land within 'Global South' cities.

Shang, Chuan, Southeast University, Nanjing, China; Ko-Yang, Lin; Hou, Guoying, Welsh School of Architecture, Cardiff University, Cardiff, UK

Simulate the impact of urban morphology on energy demand - A Case study of Yuehai, China

This study attempts to simulate the impacts of urban morphology to the energy demand of buildings, using an urban design scheme in Yinchuan, China, as a case. The process of simulation is applied to the one proposed project with three different scenarios, each of which is verified by four variables.

Vancutsem, Didier, Free University of Brussels, Belgium/Germany

Challenges of spatial planning in the context of ICT: lessons from actual research projects – new frontiers for spatial planners and cities

The emergence of ICT (Information and Communication Technologies) since the 90's has profoundly modified our urban environment and the way spatial planning was proceeded in

the past. This case study aims to demonstrate the state-of-the-art of the relationship “ICT - Spatial Planning”, connected to future frontiers of spatial planning.

Vloebergh, Guy, University of Antwerp, Antwerp, Belgium

New spatial strategies for the densely built-up Flanders region (Belgium)

Working with ‘strategic projects’ has developed into a new spatial strategy in densely built-up and spread out settlement structure Flanders. In this paper (1) the success factors of this approach are defined and (2) two strategic projects are explained more comprehensively.

Weith, Thomas; Repp, Annegret, Leibniz Centre for Agricultural Landscape Research, Müncheberg, Germany

The concept of sustainable land management: a comparative discussion (at a global scale)

The abstract seeks to initiate a discussion about the concept of Sustainable Land Management in an internationally comparative perspective. To enable mutual learning, it will focus on comparing governance approaches with regard to main drivers for land use demands and to different multi-level governance frameworks.

Zhou, Jingnan; White, Tamara, China Academy of Urban Planning and Design, Beijing, China – presented by Zhou, Yajie

Proposed low-middle income housing innovations for Chunguancun redevelopment sites, Beijing, China

This paper explores potential low-middle income housing solutions, proposed for trial application in the dynamic and rapidly developing Haidian District, Beijing. Proposed solutions include forms of development regulation and public-private partnership that are new to the Chinese planning context, as well as leveraging existing programs and funds.

Track 5: Forum on Planning Education: Are we doing it right? Co-Chairs: Griet Geerinck, Belgium; Saskia Spijkerman, The Netherlands

Baldwin, Claudia, University of the Sunshine Coast, Peregian Beach, Australia; Rosier, Johanna, University of the Sunshine Coast, Sippy Downs, Australia; Slade, Christine; Budge, Trevor, La Trobe University, Bendigo, Australia; Coiacetto, Eddo, Griffith University, Brisbane, Australia; Perkins, Tim, Edith Cowan University, Perth, Australia; Harwood, Andrew, University of Tasmania, Hobart, Australia

Expanding experiential learning in Australian planning schools

Basson, Marita, University of Southern Queensland, Toowoomba, Australia

What do planners do? Define your discipline to drive undergraduate curriculum renewal (peer-reviewed)

What should planning schools teach? To answer this question they require a good understanding of the roles that current and future graduates will undertake in an ever-changing world. This paper describes how the Define Your Discipline Stakeholder Consultation Process was used to develop a Graduate Capability Framework for planning programs.

A multi-university project aims to improve experiential learning in Australian planning schools through development, testing and provision of an online toolkit of resources. The benefits of EL need to be recognised in the accreditation process, in order to deliver graduates able to continuously learn and adapt to an ever-changing world.

ESRI, Australia

GIS Software

Paper on GIS-software related to planning education.

Ledwon, Slawomir, Gdansk University of Technology, Gdansk, Poland

Planning education, certification and deregulation in Poland

The article describes the issues of planning education in Poland, how reforms are made, what are the main obstacles to teach spatial planners and what new skills are needed, as well as argues on the governmental plans to deregulate planning profession in Poland.

Lorens, Piotr; Kamrowska–Zaluska, Dorota, Gdansk University of Technology, Gdansk, Poland

Shaping the new planning curricula in the post-socialistic context – lessons from Poland and Russia

Planning education was to a large extent non-existent in the formerly socialistic countries. Therefore, after successful political and economic transformation, the need arose for developing the new planning curricula, focused on the situation and problems that have to be dealt with in the context of post-socialist countries.

Morgado, Sofia, CIAUD, Technical University of Lisbon, Lisbon, Portugal

Shared and learnt lessons from Lisbon: Designing the city and the territory from an urbanistic viewpoint

The article addresses a systematised outlook from previous experiences in teaching programmes, research, active integration with theory and practice. The roles of Education, Research and Practice will be explored.

Olufemi, Olusola; Jimoh, Umar, University of Ibadan, Ibadan, Nigeria

‘From pedagogy to paideia’: Physical planning education in Nigeria (peer-reviewed)

Moving from pedagogy to paideia in planning entails practical civic engagement and authentic dialogue with the community through collaborative rationality in planning education in Nigeria. Paideia empowers the whole person in producing new knowledge,

skills and imaginaries that prepare practitioners to inform, influence and integrate new frontiers of planning.

Schlebusch, Sanmarie, North West University, Potchefstroom, South Africa – presented by Bernice van Schalkwyk

Planning for sustainable communities: Layout and design approaches (peer-reviewed)

Policies and strategies should not merely endeavour to eradicate poverty, create jobs or deliver houses, but embrace decisive lively and sustainable initiatives that will effectively transform an area in a liveable and lively community where noticeable changes are observed to aspire and to stimulate active community participation.

Track 1: Migration as the New Face of Change

49th ISOCARP Congress Proceedings

Effects of Drastic Changes in Living Environment: A Displaced Community

Miriam Billig, Ariel University, Israel

Abstract

The objectives of this study were to understand the implications of the forced transfer of a community to a different physical environment, and assess the effects of such an environmental change on the community's sociological structure and on restructuring people's cultural identity. We used Ingelhart's methodology of cultural shifts to describe these cultural changes. In the K.D. community, changes in the physical environment caused significant changes in the community's social structure. As a result, the collective characteristics that had once united and strengthened the community's social structure began to dwindle. Meanwhile, a growing tendency towards individualistic characteristics gradually increased, causing the weakening and eventual dissolution of both the community and its social structure.

Introduction

Community displacement and resettlement effects on population well-being have been subjects of extensive academic research in recent decades. A vast body of evidence has been collected about the difficulties encountered by resettled populations as they try to adapt to their host environments (Oliver & Smith, 2013; Fong & Green, 2011; Bhugra & Becker, 2005). In their review of recent migrants' adaptation in an Australian community, Hutchinson & Dorsett (2012) identify several elements that may impede this process, including: language barriers, discrimination, and labeling of the trauma story. Bhugra & Becker (2005) further emphasize the loss of cultural norms, religious customs, and social support systems, adjustment to a new culture, and changes in identity and concept of self. The authentic identities brought by migrants to their new environment are perceived by them as a source of pride, self-respect, a sense of community, and moral strength. This is in contrast to mainstream psychology's universal, linear models of immigrants' acculturation and adaptation, which emphasize the dissimilation of migrants' identities in a common, nationwide identity of the host community (Sunil, 2009). According to Bhugra & Becker (2005), we should preserve migrants' foundations of cultural identity to promote their well-being and successful integration into the receiving community.

Accordingly, researchers of disaster-related, forced displacement and resettlement have theorized that mobilizing the internal powers from within the resettled community itself may be the most effective strategy in assisting a population's adaptation to the new environment. This theory condones the preservation of original identities and the social structure of the community, instead of merging its social mechanisms with that of the host community and delegating responsibility for community functioning to external agents (Perry & Lindell, 1997).

A number of migrant studies were recently performed on the role of identity processes in resettled populations that encounter a new environment. Among other identity dimensions, the so-called concept of *place identity* was found to have a profound influence on the migrant adaptation process (Marcu, 2011; Sunil, 2013; Sinn & Wai-Ling, 2013). According to this line of research, physical environment and housing type may have a prominent effect on the preservation of community structure and community members' place identity. A special role is ascribed to the similarities between the new physical environment and the preceding environment and its conditions before resettlement (Heller, 1982; Kliot, 2005).

The aim of the current study was to examine the displaced community's ability to adapt to their new environment. The current study is unique in that it focuses on a normative community, one that was adequately stable from an economic and cultural point of view, and which enjoyed a high level of cultural unity and social resilience before its displacement. From a variety of possibilities that were offered, the community chose a living environment that greatly differed, from a physical aspect, from their previous home. However, they believed it was an environment that would provide them with a sufficient quality of life level, and most importantly, it would allow all of the community members to stay together.

Value analysis methodology (Inglehart & Baker, 2000) will be employed to reveal the process by which changes in physical environment and housing conditions bring about gradual shifts in community values, loss of identity, communication deficiency and, consequently, to the ultimate breakdown of the resettled community.

In contrast to prior studies that appear in the literature, which indicate a connection between environmental and cultural factors in creating place identity, the current study systematically shows the specific connection between each of the physical and social variables, and how they contribute to the concept of place identity.

The study findings will be incorporated into a framework for resettlement policy on appropriate housing for resettled communities.

Methodology

The current qualitative-phenomenological study examines the significant structures and insights of the participants throughout the subjective narratives they present in regard to the place and the community (Smith, 1993; Geertz, 2003).

Study Population: The insights that appear in this chapter are based on in-depth interviews conducted four years after the evacuation, in the new homes of the K.D. residents. A total of 30 interviews were conducted, which included 6 residents who lived in the building, 14 community members who had chosen to leave the building and move elsewhere, and 4 professionals who had accompanied the community before the evacuation¹. Sixty percent of the interviewees were women; the rest were men. Two women were housewives; one had been injured in a terror attack.

Among the interviewees were people who had been farmers, teachers and other types of professionals before moving to the city. After the move, some continued to work in their previous profession, while others changed their profession, and four became unemployed.

Research Tools: The study included in-depth interviews, according to the subjects raised by the interviewer and the interviewee and their ensuing dialog. Interviewees were asked to focus on the experience of the move to the building in Ashkelon and its influence on their lives – as both a family and a community. The interviewees were not asked about their lives in K.D., so as not to cause them any unnecessary pain, and to allow them to focus on the research questions. In spite of this, many chose to compare the reality they remembered whilst living in K.D., with the current reality of life in the building in Ashkelon.

1. The K.D. Community Settlement

The community settlement of K.D. was established in 1989. The founding families of the community wanted to establish an agricultural community settlement with a religious character (Haredi Leumi), wherein a modest lifestyle would exist; the religious Jewish law

¹The remaining six interviews were filmed interviews taken from a documentary project done by Gush Katif residents.

(*Halacha*) and the study of Torah would be its supporting pillars. Sixty families, most with many children - between 5-10 children, sometimes more per family - lived in the settlement.² The settlement area included 124 acres. Since K.D. is a border settlement, a fence was erected around the entire village and a guard was posted at the front gate for security purposes.

The residents lived in houses built by a government-run construction company, one-family and two-family homes measuring 750-1,500 sq. ft., each surrounded by a garden. As befits the needs of expanding families and according to economic ability, some of the houses were expanded over the years to 3,000 sq. ft. Despite this, the houses were simple and modest. In the settlement, educational institutions were established and a large and spacious synagogue was built. The synagogue's basement was used as a gathering space by settlement members. Likewise, additional public buildings were erected in the settlement: a library, a youth clubhouse, and a building that housed a secretary's office, emergency clinic and small grocery store. The industrial area was built within the area of the settlement; no clear physical separation existed between this area and the commercial and residential areas, and some of the residents were employed there. An area of 7.4 acres was defined as the "village green" and made into public gardens. After the settlement was evacuated, within the framework of the one-sided disengagement plan, the community was moved to a hotel in Beer Sheva, after which members were moved to a high-rise building in the city of Ashkelon, which had been rented specifically for this purpose.

2. The High-rise Building

After the residents of K.D. were evacuated, they moved to live in an apartment building in the city of Ashkelon, bordered by the sea. The high-rise building is located next to a busy, 5-lane highway, lined by other large buildings. The building was built in 2000, but by 2005, the owners had only managed to sell 40% of the apartments. In 2005, after the evacuation process from the Gaza Strip had begun, the State rented some of the empty apartments for the evacuees. The building has two entrances and a lobby. Rising above each entrance is a 20-floor tower, four apartments on each floor. Each tower houses a total of 80 apartment units, so the entire building houses 160 units, and has three elevators. Beneath the lobby are two floors that serve as a common storage area for both buildings and an under-ground parking area. The evacuees who were moved to the high-rise building received spacious

² The average age (in 2005) of the heads of families was 30, while the average age of the older members was 40+.

apartments, most of which had 5-7 rooms, each apartment's dimensions ranging from 1,200-1,900 sq. ft. Next to the parking area, a playground and sandbox were erected but, as there was no shade, most of time, this area was not used.

The move of the K.D. residents to the high-rise building didn't take place in the usual manner in which people move house. Before the decision was made, the members of the community were given a tour of the building, after which, a heated discussion was held by the general assembly, in which all of the community members took part. The majority were in favor of moving the community to the high-rise building.

Several months after the move, individual families from the community began to leave the building and look for alternative living arrangements in other communities. By the end of one year, most of the young families had left the building, leaving only 30 families from the K.D. community. Two years after the evacuation, another group, comprised of 16 families - who preferred to live in a caravan³ rather than an apartment - left the building. One year later, all of the remaining residents had left the building. Hence, within four years, the K.D. community broke up, most of its members spreading out to live in various other areas.

The uprooting of K.D. residents from their ground-floor, private homes, and their removal to a high-rise apartment building in the city was the first attempt of this type in Israel - to graft an entire community on to a new living area, which was extremely different from the previous living space. The circumstances surrounding the forced evacuation, and the need to cope with the trauma stemming from displacement, certainly did not make the process of adapting to the new environment any easier, but this was not the decisive factor for the break that was created within the community, as a result of this change in living environment.

Findings

Members' feelings about their first experience upon seeing the high-rise building in Ashkelon were expressed in most of the interviews conducted with them four years later. They spoke about a feeling of shock, and described how, from the very first glimpse, the building looked frightening and threatening; they emphasized how this fear never left them during their first months of living in the building. In contrast to the description of these fears and difficulties, many expressed the importance of the entire community staying together. Therefore, the "solution" of the building provided an answer to this immediate need. The spacious

³ These were 450-sq-ft. caravans, located in the East Lakish.

apartments and the feeling that the family had somewhere to live after their insufferable stay at the hotel persuaded them, on that night-time visit to the building, that the move to the high-rise was the right step to take. In addition, the promise that soon they would be moved from the building to a permanent settlement, also contributed to this decision. After the K.D. residents moved into the building, however, everything looked different.

From the interviews, we see that the first period of living in the building was difficult from a mental point of view. Many mentioned an accumulation of feelings of anger and resentment; others reported stomach pains that accompanied them upon arrival to the building, and which continued for a long time afterwards. The interviewees said that nothing they had experienced in the village settlement remained – everything had changed: the environment, the community itself. Changes began to occur within the families and within the feelings of the people about their new living space. In turn, these changes caused other significant changes within the structure of the community, and which in the end, resulted in its dissolution. We will now briefly describe the changes of cultural identification experienced by the community members, as a result of their forced uprooting and removal from a village environment to an urban, high-rise apartment building, as expressed by community members.

3. Physical-environmental Identity Components

3.1 Residence: In K.D., the dwelling space was that of a village environment. Residents lived in ground floor, private homes, which could be expanded and designed to fit the needs of a religious family's lifestyle – a family with many children. The families made sure to maintain their gardens, and planted fruit trees. The yard around the home also served as a play area for the children, a place in which to host neighbors and conduct family celebrations. The yard was also a place for hanging laundry and parking bicycles. There were also 20 houses which were used as temporary housing for absorbing new residents into the community, and the next generation, which allowed for the growth of the community. In addition, certain tracts of land were allocated for the building of new homes for these new families.

Although the apartments in the building were spacious, they did not necessarily fulfill the needs of a family with many children. There was no room in the kitchen for a double-oven or double-refrigerator, appliances that the families had used in their old homes. Since the apartments were rented and because of the building's limitations, it was not possible to

make any renovations or expansions as the number of family members increased. Despite the pretty view from the small balcony, it was no substitute for the garden, and the potted plants did not receive the same attention and care as the trees in the village gardens. The cost of renting an apartment in the building was high, and beyond the budgets of most young families and that of their children; therefore, the next generation could not join an apartment community without government support. The departure of individual families and groups of families from within the community to other places led to the return of these now-empty apartments to the authorities, and the community began to dwindle.

3.2 The Public Space: In the village community, there was an abundance of green spaces and beautiful, quiet areas that were tended lovingly, blending in perfectly with the surrounding natural landscape of pristine sand dunes. Most people in the settlement got around on foot or by bicycle; the settlement was filled with quiet tranquility, birdsong, and the happy clamor of playing children. The ground-floor, private homes allowed for frequent eye contact, as people moved slowly between the private and public spaces. The settlement gate surrounded and defined the public space and imparted a sense of belongingness and responsibility to the residents in regard to the space. Walking in the public space invited frequent inter-personal contact among the residents and contributed towards strengthening social relationships and a sense of both belongingness and identification among community members.

In contrast, the public space in the high-rise building was neglected and unfamiliar; the great number of tenants from many different cultures, most of whom rented their apartments, and the many empty apartments in the building all led to a sense of foreignness and alienation, isolation and emptiness. The building overlooked busy highways, full of traffic lights and flashing billboards. The public space is described as being borderless and infinite, strange and detached from nature. From the apartment building, there was no direct eye contact with the public space and mothers could neither watch over their children from their homes, nor initiate contact with neighbors who had gone down into the street. Because of the large distances, most residents had no choice but to use private cars or public transportation.

3.3 Services and employment: In the village settlement, there had been a wide variety of educational as well as public institutions in which leisure activities took place for both adults and children, along with cultural and social events. In addition, the settlement provided only the very basic services. Thus, in order to attend to various errands and more extensive

shopping needs, residents would plan an outing once a month or once every two months and make their necessary purchases in the nearby city. The settlement's guiding ideology encouraged residents to make do with what they had – adhering to a sense of “ascetic” consumerism. A large number of residents were employed within the settlement itself in the educational institutions, services, and trade.

In the high-rise, there was no place in which to hold social gatherings and, as a result, meetings in which the entire community participated were non-existent. Although the urban environment offered an abundance of entertainment and leisure activities, these activities weren't suited to the religious lifestyle of the families from K.D. The plethora of shops meant that no planning in advance was needed; everything could be purchased in daily outings in the city and members were exposure to the city's constant sales. Many described the development of a type of obsessive purchasing of “everything in sight”; the buying of luxuries and unnecessary items became a sort of psychological compensation. In the city, there was a separation between the residential space and one's place of employment; educational institutions were also far away and the children went to school by bus, so that opportunities for meeting community members decreased.

3.4 Security and Safety: Despite the security threat and the large number of injured, settlement residents of K.D., in their descriptions, do not mention fear of terrorism or how it was to live under a constant security threat. They related to the strength of the community and the mutual support, which allowed them to live in K.D. They described the living space in the village as a safe environment for children, both from the perspective of protection from strangers as well from a security perspective. From an early age, the children wandered freely and independently around the settlement, at all hours, alone or in groups, with little supervision; front doors were never locked and always open, and mothers did not worry about leaving their children home alone.

The high-rise building, on the other hand, was perceived as a place of danger, because of the unfamiliar people who lived there - some of whom were often drunk - or the criminals who might wander in off the street. There were other dangers as well: open balconies of up to 20-storeys high. The many elevators and the fear that children would get lost in the huge building was perceived as a safety threat, one which might lead to contact with criminal elements; the heavy traffic was also a constant source of concern for the children's safety. As a result, residents locked their doors at all times and children were not allowed to go out

alone. The dependence upon the elevators in the building was also a difficulty in relation to family management; mothers of young children preferred to stay at home, rather than experience the difficulty and danger of getting in and out of the elevator. Afternoon meetings between the children after school stopped almost completely, and any such meetings were always supervised by parents.

4. Social Identity Components

4.1 Face-to-face relations: The private homes and unfenced yards of the village and the habit of walking on foot from place to place within the settlement encouraged eye contact among members. This type of eye contact created “face-to-face” relations which, in turn, created a sense of responsibility and mutual trust among members, stemming from the fact that everyone knew everyone. Relationships operated according to an “open door” policy: neighbors were friends, who could drop in for a visit at any time. No invitation was necessary; group meals and trips were frequent. Practical, daily chores like hanging up laundry, gardening and yard work or watching over small children in the garden were something of a public affair; each task of this type was a possible opportunity to converse with neighbors or to make eye contact with passing guests and invite them in for a visit.

Alternatively, in the high-rise building, people stayed shut up behind locked doors, and the door was never opened to strangers; there was no contact at all with the other neighbors. Sometimes a week or month might pass by without seeing a neighbor from the K.D. community, something that could never have happened in the settlement. Life in the building was dependent upon the elevator moving up and down between the floors; there were few opportunities to establish eye contact among community members. At times, a competition developed among community members in regard to entering the elevator, when everyone was trying to get to the same destination. This caused a great deal of tension and frustration. The move to the city transformed daily chores and tasks that had once been “shared” into completely private activities, since whatever was done at home or on one’s balcony remained singularly anonymous. Leaving the home to run private errands became activities completely lacking in social interaction, and were only experienced on the individual, private level.

4.2 Community Skills: In the settlement, all of the members belonged to the community simply by living there. The community life was very intensive; people were naturally interested in one another’s doings, and relationships were spontaneous, based on daily

contact. Most of the community members were involved in activities geared towards the good of all, and in the settlement committees dedicated to promoting the village's culture and education. During times of security threats, members came together to strengthen the community, and before the evacuation, most of the community's efforts were invested in activities related to propaganda and protests. The unique views and weather of the village and its close proximity to the sea were a source of attraction to visitors. The large and spacious homes allowed for the inviting of guests: friends and children of all ages on weekends, holidays and during vacation times.

Contrariwise, life in the high-rise building led to a reclusive lifestyle, members stayed at home, and the relationships among community members became much more formal and less frequent, rather than something that could be taken for granted. Community activities dwindled. Therefore, a great deal of energy was suddenly required to maintain close community relations. After moving to the city, the community set up new goals for itself, but members did not cooperate or make enough of an effort for the good of all as they had in the village; most people focused solely on the advancement of their own families. Moving to the apartments in the high-rise also changed the codes of hospitality: community members went from being families that were used to being hosts to families that were now the guests of others. The lack of an atmosphere of Shabbat and the holidays also brought about a change, causing families and teenagers to travel to others in order to celebrate with relatives and friends living in village settlements, and in an attempt to get away from the city.

4.3 Parenting and Family: In the village settlement, parents and children alike had to cope with the difficulties of terror attacks. They shared their fears and worries, as well as the struggle against the disengagement. These shared experiences contributed to the nuclear family's functioning as a unified and consolidated family unit. Together with this, the parenting style in the settlement was described as "casual" – for most of the day, children were not at home; after school, they played and wandered around the settlement together, under the watchful eye of "everyone". The relative isolation of the village from other settlements, as well as the security threat, served to minimize the arrival of the extended family to the settlement. Thus, neighbors and friends served as a replacement for the extended family, as reflected in group meals on Shabbat, holidays and celebrations; the families also supported and cared for families that were injured or in need of help, accompanying one another through difficult times.

In the high-rise, members related how parenting suddenly became a full-time job, without a break, 24 hours a day, all week long, without the help of other community members. In some of the families, the status of the parents was suddenly threatened. Some parents became unemployed and were forced to seek out support from external sources, thereby becoming dependent on others. In some cases, children supported parents. The move to the city caused each family to turn in upon itself, resulting in a decrease of the mutual support that had once among community members and an increased connection with the biological, extended family. As a result, the sense of belongingness with the family constituted an alternative for the previous sense of community belongingness.

4.4 The Religious Lifestyle: The framework of the village community allowed for community control over the religious lifestyle in the living environment. Certain standards were established regarding the community lifestyle and the extent to which religious customs and prohibitions would be followed – in both the private and public sphere. Most community members held places of significant authority in the community; decisions were made based on meetings, in which all members participated on an “as needed” basis. The synagogue that was erected in the settlement served as its spiritual and cultural center; the routine daily meeting for prayers formed close bonds of friendship among residents. After prayers, the entire community would often share a meal, and various matters would be discussed. In addition, the settlement offered many enrichment classes for men, women and children.

The move to the building in the pluralistic city meant that the community could no longer control the community’s religious lifestyle through the residential environment; no social supervision was possible, and the status of the community rabbi declined. Community members became exposed to the desecration of Shabbat, immodest dress, billboard images which they considered improper; and each person chose a way in which to cope with the new reality. A synagogue was established in the building’s basement, but many chose to attend different synagogues in the city, and women preferred not to come to pray at all. There were several attempts to arrange group meals among the community members and to hold lessons in the building, but the feeling of being crowded, the lack of windows, and the smell of dampness caused bad feelings among members and these types of meetings soon came to an end.

5. Place Identity Components

Patrilocality and collectivity: In the village settlement, residents were connected to their living space through the history of the place, the religious ideology, and through the memory of those that had died there. The state of the community was tested and ratified anew as the disengagement date drew closer. Community interaction and social unification grew and community members perceived themselves as one, big family. The rabbi led the community and residents held onto their religious faith, and believed they would win their struggle. There was a strong sense of identification and patrilocality, along with a great feeling of loyalty from the adults and youth – for both the community and the surrounding area. After the settlement's displacement, the evacuees expressed great longing for the village and a sharp desire to return to it.

5.1 Alienation and Individuality: The move of the residents to a high-rise building in an urban environment was perceived by them from the beginning as a temporary solution, and no one thought of staying in the place. Many community members could not find their place in the city or relate to either the city or the people in the area on an emotional, spiritual or ideological level. Many of the teenagers refused to live in the building and were ashamed to be living in the city. The lack of meeting places and eye contact among community members, and the transformation of daily practical tasks - that had once been shared and had now become completely private activities - were all factors that added to the members' sense of isolation and alienation.

Members spent much less time together, which led to a minimization of the collective components that had once strengthened and unified the community's social structure. Instead, in the city, individualistic components became dominant, serving to weaken the social structure, and concluding with the complete dissolution of the community.

Discussion and Conclusions

The events of the K.D. community gives us a deeper understanding of the process by which a community is structured, which develops as a result of specific characteristics - such as the type of homes and structures built, and the physical characteristics of a particular living environment within a certain culture. The use of Inglehart's (2000) methodology in describing the *cultural shift* process helped to present a clear picture of the different states of the community, resulting from each of the living environments.

The findings show that the type of lifestyle one leads in the village environment, and the variety of public structures and services established within the enclosed space of the settlement, created clear borders for the community and enabled it to maintain its religious lifestyle. Residents encouraged eye contact and frequent formal and informal opportunities to meet with one another. This contributed to developing and maintaining “face-to-face” relationships, and an “open-door” policy. The security risk and the number of injured among residents also contributed to the members’ sense of unity and social resilience. All of these factors played a part in the adoption of a collectivist structure, which was shared by all of the residents, and which encouraged the development of communal functioning, responsibility and concern for all of the community members. This type of community situation created a sense of *patrilocality* (place identification), and the desire of residents and their children to continue living there.

In contrast, the move to the high-rise building and urban environment, where there was no defined public spaces and no special public structures or services in the area, led to a blurring of the community’s borders, making it difficult for them to engage in direct eye contact with other community members. People tended to either stay at home, behind locked doors, or wander aimlessly and alone throughout the city. Hence, opportunities to meet became less and less frequent. All of the above brought about the adoption of an individualistic structure, which weakened the social structure, and did not allow for the development of place identity among the community members.

Apparently, the social structure, which had become increasingly strengthened and unified in the days before the evacuation, and the sharp desire of community members to remain together afterwards were simply not enough to help the community get through the great dramatic change in their living environment. The lack of appropriateness of the high-rise building for families with many children; the lack of a place where all of the community members could gather and meet; and the fact that there were no clear borders – only there were all key contributing factors that served to destabilize the foundations upon which the community was built, and which eventually brought about the community’s failure to adapt to the move. Study findings show how important it is to have an accurate prior understanding of the community structure, and the need to describe the important functions that will enable the maintenance of its stability during times of significant environmental change. We can assume that if the community had been moved to an environment that was more similar to K.D. or an environment where the group could have been isolated, instead of having

strangers in their midst, the community would perhaps have managed to better adapt to the new environment. This, in turn, may have prevented the community's breakdown and its eventual collapse.

References

Bhatia, Sunil (2008) "9/11 and the Indian Diaspora: Narratives of race, place and immigrant identity," *Journal of Intercultural Studies*, 29(1), 21-39.

Bhugra, Dines. & Becker, Matthew A. (2005) "Migration, cultural bereavement and cultural identity," *World Psychiatry*, 4(1), 18.

Fong, Rowena & Greene, Roberta R. (2011) "Risk, Resilience, and Resettlement," (in Roberta, R. Greene & Nancy Kropf (Eds.)) *Human Behavior Theory: A Diversity Framework*, (p.147), New Jersey, Transaction Publishers.

Hutchinson, Mary & Dorsett, Pat (2012) "What does the literature say about resilience in refugee people? Implications for practice," *Journal of Social Inclusion*, 3(2), 55-78.

Inglehart, Ronald & Baker, Wayne E. (2000) "Modernization, cultural change, and the persistence of traditional values," *American Sociological Review*, 19-51.

Kliot, Nurit (2005) *Decision-making on settlement evacuation in Israel, compensation and resettlement: Sinai 1982; Gaza region and North Samaria 2005*. Jerusalem: The Floersheimer Institute for Policy Studies (Hebrew).

Marcu, Silvia (2012) "Emotions on the move: Belonging, sense of place and feelings identities among young Romanian immigrants in Spain," *Journal of Youth Studies*, 15(2), 207-223.

Oliver-Smith, Anthony (2013) *Catastrophes, Mass Displacement, and Population Resettlement*. In Rick Bissel (Ed.) *Preparedness and Response for Catastrophic Disasters*, (p.185), CRC Press.

Perry, Ronald W. & Lindell, Michael K. (1997) "Principles for managing community relocation as a hazard mitigation measure," *Journal of Contingencies and Crisis Management*, 5(1), 49-59.

Sinn, Elizabeth & Wong, Wai-Ling (2005). "Place, identity and immigrant communities: The organization of the Yulan Festival in post-war Hong Kong," *Asia Pacific Viewpoint*, 46(3), 295-306.

Housing in K.D communal Settlement



High-rises Building in Askelon



Participatory Planning in the Era of Public Private Partnerships: Complexities and Contradictions in a Migrant City in India

Tathagata CHATTERJI, Manipal University, India

Author ID: 70

Synopsis

This paper explores how local political factors, rural-urban divide and conflicts between multiple tiers of government, impact participation of the migrant communities in the urban planning and governance process in a dynamic urban region, through a case study of Gurgaon, India. In two decades Gurgaon transformed from being a small agricultural town at the outer periphery of Delhi, to Northern India's premier corporate destination and a global hub for the outsourcing industry. The new city is largely made up of migrants from all over India. However, this largely unplanned, market driven, rapid urban makeover has also created a complex settlement pattern marked by overlapping layers of socio-spatial relations. The everyday tensions and contradictions of this transitional journey, which came out sharply with the formation of a new municipal corporation, form the immediate backdrop the study.

1. Introduction

In the contemporary era 'public participation' through involvement of non-state actors, NGOs and civil-society groups – have come to be recognised as one of the cardinal principles of planning in the democratic world. On the other hand, with the spread of neoliberal ideology, 'public-private partnerships' or outright privatisation have become the preferred mode of delivery for large scale infrastructure projects in the advanced capitalist economies of the Global North, and are being increasingly adopted by the emerging economies of the Global South. While a large body of research exists on both 'participatory planning' and 'privatisation of urban infrastructure' in the context of the well established cities of the matured democracies of the Global North, there is a gap in our understanding about how these abstract notions are shaping the cities of the newly industrialising, democratic countries in the Global South and particularly what role does planning play in this scenario.

This paper explores the interrelated twin issues of citizen participation and public-private-partnerships in delivery of large scale urban infrastructure in India. In recent years, India's impressive economic growth, particularly in the Information Technology driven knowledge economy sectors, along with the steady climb of the Indian cities in the megacities list, has attracted much international attention. Yet, despite the presence of a few megacities, and high economic growth rate, with only 69 percent urbanisation level, India as a whole, continues to be the largest rural country in the world. Sharp rural-urban dichotomy, has become a key feature of the Indian polity.

The case study location of this research, Gurgaon, exemplifies complexities and contradictions of this transitional journey. The city, which barely existed as a non-descript agricultural town, at the outer periphery of Delhi, in the early 1980s, over the next two decades, turned into a prime corporate hub for the office jobs outsourced from the West. The new city is largely made up of migrants as new economic opportunities attracted educated urban middleclass as well as construction labours and other lower-end workforce from all over India. However, this largely unplanned, market driven, rapid urban makeover led by the real estate interests and facilitated by parastatal agencies, has also created a complex settlement pattern marked by overlapping layers of socio-spatial relations. Simultaneous

existence of three layers of Gurgaon (i.e. rural, industrial manufacturing and IT services) in close proximity to each other is producing new claims and conflicts.

The paper argues that these socio-spatial dynamics has given rise to political contestation at multiple scales, in terms of rural-urban affiliations and of the interplay between class and caste interests and identities. The three dominant groups in the city: the existing rural population and people with ties to the old agrarian economy, the new urban middleclass tied to the knowledge economy sectors and thirdly the blue-collar workforce, made up of local poor but mostly migrants. Each of these groups has different ways of accessing the state and different channels of participation which ultimately impact the planning process and governance effectiveness. The underlying social and political tensions which came to the fore with the formation of a new municipal corporation in 2008, and its first election in 2011, forms the immediate backdrop of the study. The paper draws upon qualitative research involving field observations; interviews with state planning agency officials; corporate executives; and civil society activists. The next section of the paper provides a background about the participatory planning issues in India, by situating the urban reforms within the ongoing socio-economic and political changes in the country. The third section then provides an overview of the rapid transformation of Gurgaon from a small agriculture oriented township to a city of industrial manufacturing and then to an important corporate hub in the knowledge intensive IT-BPO segment. The fourth section then discusses the complexities and contradictions of participatory planning in the context of such dynamic economic restructuring. The fifth section concludes the discussion through a summary.

2. India's urban policy environment

With over 30 million people living in the cities, India has the second largest urban population in the world. But in percentage terms, India's urban population is still only 31.12 percent, even though the recent census shows that the decadal urbanisation rate has accelerated to 3.5 percent over the previous decade's fairly modest record of 2.5 percent. Such overwhelming domination of the rural areas had meant that in the democratic environment of Indian polity, urban development never received adequate attention at the higher echelons of governance. Rural areas matter more, when it comes to elections to the state and national legislatures.

However, closer integration of India with the global economy from the 1990s onwards has increased the importance of the cities – more particularly large urban agglomerations in national economy. Information Technology (IT) driven business process outsourcing (BPO), which have become fastest growing segment of the economy and the main export revenue earner for the post-liberalised Indian economy, are overwhelmingly concentrated in the extended metropolitan belts of Bangalore, Chennai, Delhi, Hyderabad, Mumbai and Pune, having supply of large educated workforce. New economic opportunities in the service sector has contributed to sharp increase in the number of middleclass from barely 1 percent of the population in 1985 to 5 percent (or about 50 million) people by 2005 and this is projected to reach 20 percent of the population by 2015 (McKinsey Global Institute 2007). On the whole, contribution of the service sector has increased from 37.9 percent of the GDP in 1981-82 to 56.4 percent in 2011-12, while over the same period the share of agriculture and other primary sectors has decreased from 37.6 percent to 17.2 percent (Reserve Bank of India 2012).

Economic and political reforms in India began almost simultaneously during the early 1990s. In 1991, a major set of reforms were announced on the economic front, which opened up several sectors, through reduction in customs duties, easing of norms for foreign investments and scaling down of licensing requirements for setting up of industrial units. Since then the national government has progressively adopted market friendly policies, favoured closer

integration with the global economy, and had sought to facilitate private entrepreneurship by reducing regulatory role of the state - jettisoning earlier policies of import substitution and dependence on public sector.

Almost simultaneously, a major step towards administrative and fiscal decentralisation was adopted through the 74th Constitution Amendment Act (74CAA) of 1992. In the multilevel governance framework of India, the constitution and functioning of the urban (and rural) local councils had traditionally been under the domain of the state (or provincial) governments. The landmark 74CAA legislation explicitly recognised the urban local bodies as the third tier in representative democracy, which ensured regular elections and security of tenure for the local councils (A matching legislation 73rd Constitution Amendment Act, extended similar facilities to the rural councils). The act also provided for clear demarcation of administrative powers and financial revenue sharing between the state and the urban local governments (Jain 2003; Shivaramakrishnan 2011). One of the most crucial functions, which the 74CAA sought to devolve to the local bodies, was the function of 'town planning'. It was envisaged that devolution of planning to the lower tier will ensure greater public participation.

Economic liberalisation, particularly rolling back of the Central government's licensing and other regulatory controls over industrial investments have considerably strengthened the role of the state governments on economic matters, in India's federal political system. There is increasing economic competition between the Indian states to attract new investments. However, reluctance of the state governments to devolve power to the lower tier has come in the way of the urban local governments functioning in the way envisaged by the 74CAA. Thus, elections to the municipal councils are regularly held, but their functional and financial domains remains restricted to managing only the basic services. Even there, the Municipal Commissioner, a state government appointed bureaucrat, retains the executive power. This distribution of power often turns problematic when rival political parties are in power at the state and municipal levels. Thus in the post-liberalisation era, in the multi-governance framework of India, considerable power has got concentrated at the meso-level rather than at the local government level.

Urban planning and control over land use change are particularly closely guarded by the state governments citing technical capacity gap, despite explicit intents expressed under the 12th Schedule of the Constitution, to transfer these functions to the elected municipalities (Shivaramakrishnan 2011). Land use planning continues to be handled by bodies like Urban Development Authorities or Town Planning Directorates, which not only report to the state governments, but in the case of big cities, are directly headed by the state chief ministers. The keenness of the state governments to hold on to the urban planning powers, need to be seen in the light of the ongoing structural changes in the Indian economy.

Rapid growth in the IT-BPO and other knowledge economy sectors had substantially stimulated the urban land markets of the Indian cities. Measures such as, lifting of controls on FDI investments in the real estate sector and passage of the Special Economic Zone (SEZ) Act in 2005, provided additional stimulus to the real estate market. According to a research by an international real estate consultancy, growth in the IT sector has been mirrored by the FDI inflow in India's construction and property markets, which went up from 3.4 percent in 2005-06 to 22.1 percent in 2009-10 (Jones Lang LaSalle 2010). By controlling town planning and land use functions, the state governments wish to retain control over this massive economic engine.

With rising domestic economic competition between the Indian states, the state governments are encouraging conversion of agricultural land at the peri-urban areas of the big cities to develop new townships and SEZ, to attract global investments in the IT-BPO sectors. In this neoliberal era, most of these new economic spaces, are being produced through public-private joint venture, with private sector real estate developers, building the gated enclaves,

matching quality specifications of the global corporate economy, while state agencies are prioritising delivery of trunk infrastructure. In spatial terms, these gated enclaves are located in the Panchayet (rural council) areas - beyond the jurisdictions of the municipalities or elected urban local governments.

While these high security and sanitised gated enclaves have emerged as the spaces of articulation for the globalised Indian economy – they have generated an utterly fragmented urban pattern split into multiple jurisdictions – rural *Panchayet* (council) areas, Development Authority areas, special economic zones and private townships. This multiplicity of jurisdictions has in-turn thrown-up fresh challenges in urban governance and ensuring participatory decision making, to meet the needs of the people from a diverse cross section. The new urban areas typically draw migrant population from a wide socio-economic stratum - from management professionals and software entrepreneurs at the up to humble construction labours and rural migrants. New tensions emerge in the process to reconcile the new middleclass, existing rural residents and the migrant labour. A graphic manifestation of these tensions is evident in the dramatic transformation of Gurgaon from a rural outpost at the fringe of Delhi, to Northern India's prime elite 'lifestyle' destination, as discussed in the following section.

3. Transformation of Gurgaon

Gurgaon district (and town of the same name) is located in the state of Haryana abutting the southern border of the National Capital Territory of Delhi. It is just about 15 km from Delhi airport and part of the National Capital Region (NCR) planning framework. The First Master Plan of Delhi (1961-81) envisaged a multi-polar spatial structure at a regional scale to decongest Delhi and recommended development of the surrounding ring towns as counter magnets to Delhi's urban core. Amongst the satellite towns however, "only a modest growth [was] contemplated" for Gurgaon (Delhi Development Authority 1962). It remained a backward agricultural town until the mid-1980s and started to grow dramatically.

The economic pull of Gurgaon has drawn a large number of migrants. As Table-1 shows, between 2001 and 2011, the population of Gurgaon district increased by almost 74 percent, the urban population increased by a staggering 283 percent, while the formal urban limits also expanded by almost six times. Phenomenal urban growth of Gurgaon, and two other districts (Faridabad and Sonapat) bordering Delhi, played major roles in catapulting Haryana amongst India's most urbanised states, from previously being the most rural. Haryana's urban population has increased from 24 percent in 1991 to 29 percent in 2001 to 35 percent in 2011 (Census 2011). However, barring the areas bordering Delhi, the rest of the state has still remained, predominantly rural.

Table 1:

Population Increase in Gurgaon between 2001 and 2011

Census Year	Population of Gurgaon District	Population of Gurgaon Municipal Area	Decadal growth percent	Urban Area (in sq.km)
2001	870,539	228,820	73.93	35
2011	1,514,085	876,824	283.194	207

Source: Census of India (2011)

Development process of Gurgaon reflects the tensions of its particular geographic location, where economic growth is happening due to its close proximity to Delhi, but is being

mediated through the political culture of Haryana - the push factors of Delhi's restrictive planning process and pull factors of Haryana's liberal regulatory regime. The growth may be divided into two clearly discernable phases. From the mid-1980s to the mid-1990s, Gurgaon developed as Delhi's industrial and residential suburb. And then the growth momentum further picked-up as Gurgaon turned into a major business services outsourcing hub.

The industrial era of Gurgaon began with the establishment of the Maruti-Suzuki automobile plant and its ancillary factories in 1982. Later on several other factories in diverse fields like auto components, telecommunication equipment, and fashion garments started in Gurgaon. In 1981-82, two big Delhi based property developers, received licenses from the Haryana government to build large private sector residential townships, which began to be occupied from 1991 onwards. Gurgaon's land market, however, benefited from the concurrent shrinkage of real estate opportunities in Delhi.

Supply and control of urban land within Delhi is closely managed by the Delhi Development Authority, a public sector agency, through a restrictive planning regime. But, this rigid land use control mechanism ran into a major crisis during the 1990s, with the proliferation of illegal construction, leading to court cases over environmental degradations and Master Plan violations. The lengthy legal controversy virtually stopped building activities in Delhi from the mid-1990s, until a revised plan was notified in 2007 (Chatterji 2003). Supply constraints in Delhi during a vital phase of economic growth, stirred the property markets of the suburban towns in the neighbouring states. At this stage, Gurgaon's nearness to Delhi airport and availability of high quality real estate, turned it into a sought after destination for the business process outsourcing industry.

In sharp contrast to Delhi, Haryana had been following a liberal land policy since the late 1970s onwards, long before the advent of economic liberalisation on the national stage (Joardar 2006). The Haryana Urban Development (HUD) Act of 1977 empowers the state agencies to acquire agricultural land for developing residential townships and industrial estates and contracting out development to the private sector. Under the Haryana Development and Regulation of Urban Areas (HDRUA) Act of 1975-76, licenses are awarded to big private developers to acquire, assemble and develop a minimum contiguous 100 acres of land. Later on, encouraged by the impressive growth of the corporate economy and the construction boom of Gurgaon, Haryana government took steps to provide further impetus to the sector, by easing norms for conversion of industrial manufacturing zones to IT-Business parks under the state IT policy. Moreover, Haryana government enthusiastically encouraged growth of the IT-BPO oriented Special Economic Zones (SEZ) in Gurgaon, after the promulgation of the SEZ Act by the national government in 2005. Under this act IT-BPO oriented SEZs could be established on a minimum 10 hectares of contiguous land. These liberal provisions enabled large real estate companies to build up huge land banks in the state, particularly in Gurgaon near Delhi. They started churning out high quality residential and commercial projects in quick succession as demand started soaring from the mid-1990s. Interestingly, until 2008, Gurgaon region was mostly classified as rural and absence of a local regulatory regime, (in the form of a municipality) further fast-tracked the permits and clearances from friendly parastatal agencies (Debroy & Bhandari 2009).

GE Capital's decision to locate its call-centre facility in 1997 in a DLF business park set the trend for other companies in the IT-BPO sector (e.g. American Express, Erickson, British Airways) to establish their global business sourcing offices in Gurgaon. Almost as a rule, the global corporations operate from leased space in business parks promoted by the property developers, which provide large floor plates in mirror-glass office buildings, pleasant landscaping, big parking lots, round the clock power back-up to offset for frequent outages in grid supply, advanced communication and security infrastructure, matching the specifications of the global corporate sector. Leasing of space, rather than direct property ownership, provides them with operational flexibilities in scaling up and down their establishment sizes,

with the ebbs and flows of the global economy, but also shelters them from the messy dealings of land and property markets. The corporate real estate sector, in this situation, has come to represent global capital, as the point of interface between the global corporations and the local state. Three big real estate developers, DLF, Ansals and Unitech in particular, played pioneering roles in this shaping of modern Gurgaon.

Dramatic transformation of Gurgaon, within a span of two decades from agriculture to industrial manufacturing to hi-tech business services have drawn into close proximity people from diverse socio-economic strata and also migrants from different parts of India. However, this property development-led growth model with loose planning control has produced a patchwork quilt development pattern. Educated middleclass, which are closely associated with the corporate economy of Gurgaon generally, reside in planned gated apartment complexes and HUDA sectors. The modern city has engulfed several villages which have turned into urban slums with informal commercial and residential activities. Original local residents, people associated with the agrarian economy, usually reside in the village areas and have expanded their old village houses to several stories for rental and commercial purpose.

There are strong symbiotic economic relationships between the formal and informal settlements. Shopping malls and markets within the planned residential enclaves accommodate only a few high-end shops. Thus, most residents of the gated complexes depend on the informal village bazaars for their daily needs. The lower-end migrants, who started coming to Gurgaon during its take-off as an industrial city, and the subsequent construction boom, find their shelter in these urban villages – turned slum areas. Thus these informal areas now accommodate the entire service population of the formal economy. The security guards, electricians, and maids, who work in the business parks and the apartment buildings, reside in the nearby village pockets. Yet, the middleclass areas detest the presence of the rural enclaves.

Unplanned growth at a rapid pace has put severe pressure on Gurgaon's civic infrastructure. Seven to eight hours of power outage is almost a daily occurrence. Up-scale residential enclaves and corporate business parks all provide power back-up through diesel generators, along with good quality internal infrastructure. But the villages abutting the boundary walls of these enclaves are in abysmal condition due to inadequacies in water supply, sewage and drainage facilities. While the newly extended metro rail has improved connectivity from the commercial core of Gurgaon to Delhi, there is no public transport for inner city commuting. Corporate firms in Gurgaon regularly operate chartered bus and taxi fleets to transport their employees. For those without a personal vehicle, the only commuting option is to hitch a ride in crowded three wheeler auto rickshaws. Cycle tracks and pedestrian walkways are practically non-existent.

Management of Gurgaon's urban transformation has suffered due to institutional deficiencies and a multiplicity of agencies. Haryana Government's Department of Town Planning (DTP) was entrusted with responsibility for ensuring development coordination between public and private agencies. But, land configurations and project phasing by the private developers has tended to follow the logic of land assembling through negotiations with local farmers, rather than the phases prescribed by the DTP's Master Plan. This in turn has created difficulties for routing of trunk utilities (Biswas 2006). The absence of a strong locally based planning agency had further compounded the problems of development coordination. M.C. Gupta, a former chief secretary of Haryana, when interviewed on 4th January 2011, observed that 'Gurgaon needs its own development authority. Planners sitting in Chandigarh (*the joint capital of Punjab and Haryana*) cannot coordinate such a fast growing area on a daily basis'.

A number of state and local agencies are involved in plan implementation, each with piecemeal jurisdiction. Haryana Urban Development Authority (HUDA), a state level agency, having a local office, is responsible for developing roads and provision of water supply,

sewerage and drainage in the newer parts of the city, which includes master planned sectors directly developed by HUDA and the gated enclaves, developed by the private builders. For private enclaves, the developers provide internal services and pay External Development Charges to HUDA for trunk services linkage. The industrial estates, like Udyog Vihar, is under the Haryana State Industrial Infrastructure Development Corporation (HSIIDC), The older part of the town, is directly under the control of the municipality, while state government's Public Works Department (PWD) is in charge of providing roads and services. The village areas had been traditionally under the jurisdiction of the local *Panchayets*.

The local agencies, the municipal committee and village Panchyets have been the weakest entities in Gurgaon's transitional journey, lacking financial, technical and legal capacity for urban management. Parastatal agencies like HUDA and HSIIDC, who have technical or financial capabilities, tend to act more like private entrepreneurs, in parcelling out new land developments, rather than enforcing overarching development controls or coordinating delivery of public services. A local municipal councillor complained:

For all these years, Gurgaon had been treated as Haryana's cash cow. Gurgaon generates half of Haryana's revenue. But what does it get back in return?
(Interview: 6 January 2012)

Similar resentments against the way Chandigarh based state leadership had handled the state of urban affairs of Gurgaon, were expressed by almost every politician and civil-society activist interviewed, indicating a rare degree of unanimity amongst the local elites in an otherwise fractious environment.

4. Politics of public participation

Incomplete devolution of administrative powers from the state government to the local government; a privatised approach towards city building, without a strong institutional set-up for urban management; and deep rural-urban social schism, have generated multiple problems in Gurgaon's transitional journey from a small town to one of India's prime international economic gateways. In this context, the formation of the Municipal Corporation of Gurgaon in 2008, encompassing 207 sq.km areas, generated much hope amongst a large section of the urban and rural population alike, in anticipation that it would become the overarching body for coordination of the developmental activities and become a platform for negotiation between the diverse stakeholders. However, the prevailing social divisions have come in the way of effective engagement between the urban middle class dominated civil-society groups and the elected municipal councillors with a rural background, turning the MCG's focus away from developmental issues and reducing it into another forum for power tussles between rival caste lobbies in Haryana politics. The first election of the newly formed Municipal Corporation of Gurgaon (MCG) vividly exposed these internal tensions, which had been simmering for two decades.

Residents of the rural and urban areas of Gurgaon follow separate paths to engage with the state on day-to-day matters. Residents of the urbanised villages tend to follow the party based political system, by seeking help from the political leaders, as the political leaders have deep local ties. But the middle class professionals residing in the planned HUDA sectors and private colonies prefer the 'apolitical' route. A large percentage of the middleclass is also not 'local' and has migrated to the region from other Indian states. In recent times, neighbourhood associations of the formal, planned areas, called Resident Welfare Associations (RWA) have emerged as the main vehicle articulating the voice of the middleclass. All HUDA sectors and builder enclaves have their own RWAs, elected by local residents. However, the RWAs are only consultative bodies. Management control rests with the original developers: HUDA for planned HUDA sectors and private real estate companies for the privately developed apartment complexes and townships, even decades after people

moved in. The private developers avoid obtaining Completion Certificates, by keeping a small part of their project incomplete, to retain possession of the areas developed. The Town Planning department, functioning directly under the Chief Minister's office, tends to extend the project time frames, in lieu of small fines,

The RWAs have taken up with HUDA the issues of infrastructure deficiencies and non-compliance with the Master Plan guidelines by the private developers, but without much result. During a meeting with several RWA committee members on 3 January 2012, it was frequently alleged that the private developers had not delivered community facilities as promised. An RWA executive committee member alleged:

The land which was marked for Community Centre has been converted into a membership-only club. Now there is no space to organise festivals like *Bhagwati-jagarans* or *Ram-leelas*.

During the same meeting, other RWA executives complained that in several apartment complexes, builders had converted areas originally marked for local convenience stores into air-conditioned shopping malls, encroached roads and children's parks and frequently hike monthly maintenance charges. Sanjiv Sablok, a prominent community activist expressed his helplessness about complaining to HUDA about private builders:

We keep doing rounds at HUDA office and submit petitions. They listen to us. Treat us to tea and coffee. But that's about it. They file the complaints and forget it. Nothing further happens. The builders are very powerful.

Initially content with playing second fiddle to the big developers and HUDA, the RWAs of Gurgaon have become increasingly active politically. Subinder Khurana, President of the Cyber City Welfare Association, when interviewed on 3 January 2012, held that the reluctance of the middleclass to engage with the political process, could be due to their transient nature. Professionals from different parts of India initially considered staying in Gurgaon only as a temporary step in their career ladder. However with the passage of time, they started growing roots, purchased property and taking more interest in civic affairs.

In 2005, more than one hundred RWAs of Gurgaon came together to form an apex body, called Joint Action Forum for Resident Associations (JAFRA), to more effectively lobby the local administration. Representatives of a few village areas were also accommodated, to give it a more inclusive character. Since then JAFRA has been at the forefront of demanding formation of a more responsive local government with overarching power over various public agencies for integrated urban development. But its effectiveness as a lobbying body is to a large extent compromised due to its internal contradictions. The day to day problems faced by the HUDA sectors and the private enclaves tend to differ, except on issues like mass transport or public parking spaces. There is also a huge trust deficit between the village areas and the planned enclaves. It is a common feeling amongst the educated elites of Gurgaon, that local rural people, many of whom had become rich overnight by selling land, lack 'education, culture and social manners'. Whereas, P.K Sangwan a political activist, originally hailing from Jharsa village observed:

Highflying people who live in these flats look down upon us, as rustic, uneducated blokes. They don't give us any respect. Our worlds are very different, though we live, side by side. (Interview: 6 January 2012).

Engagement between the civil-society activists and the local government received a major boost in 2008, with the formation of the municipal corporation. Like other municipalities of India, the MCG has two wings: a legislative wing consisting of the mayor and the elected councillors of each ward, and an administrative wing directly under the Municipal Commissioner. Since the urban middleclass in India typically consider urban local bodies to be 'corrupt' and 'inefficient', one of the first priorities of the newly formed MCG was to build

trust amongst the people. Mr. Rajesh Khullar, who was the Commissioner from 2008 to 2011, initiated several moves in that direction, by enhancing partnership arrangements with the civil society groups and augmenting e-government tools. According to Mr Khullar, the objective was to create a template for a 'transparent and efficient civic body' before the start of politicking, with the arrival of the elected councillors (Interview: 2 February 2011). 'Harnessing the power of the IT to break the barrier between the in-group and the out-group' became the guiding mantra of the nascent municipal body.

With the above objectives the MCG started to upload information about contracts and tendering for municipal projects on its website, apart from regular items such as property taxation, birth, death and marriage registration, and a section for lodging of complaints. To encourage public participation in local developmental issues, the MCG formed Citizen Supervisory Committees for each ward. Payments for small civic works, such as road repairs, were linked to getting a satisfactory report from the citizen committees of the concerned ward. Additionally, the MCG partnered with NGOs to launch environmental improvement programmes like creating shelters for stray cows, turning rubbish dumps into parks and cleaning of local markets. However, participation of the civil-society groups in urban governance took a downward turn after the municipal elections, due to the social gulf that exists between the urban elite dominated 'apolitical' NGOs and the 'rustic' political leadership which came into control of the MCG following the election. This, in turn, robbed the nascent body of much-needed technical and managerial capacity at a crucial stage.

The MCG, consisting of 35 wards, covering an area of 207 sq.kms and over 1.5 million people, had its first election in May, 2011, three years, after it was formed. Each ward elected one councillor for a five year term. The councillors themselves elected a mayor and a deputy mayor amongst themselves. The voting pattern was marked by sharp rural-urban polarisation. In the formal planned areas, voting was only 20 to 30 percent, but in the village areas it was between 80 to 90 percent (Times of India 2011). This general pattern was only defied in Ward-30. Here middleclass voters came out in large numbers to elect Ms. Nisha Singh an ex-Google executive as an independent candidate. Ms. Singh extensively used social media tools like Facebook and Twitter to mobilise her supporters. In almost all other wards, candidates with strong rural links, having caste and deep socio-political ties with the village communities, were elected. The election was fought along party lines. However, cutting across political divide, elected councillors mobilised along caste lines to elect the mayor. The caste and political mobilisation, in the MCG election, once again demonstrated the relative insignificance of the urban middleclass in electoral politics, despite its recent economic success.

Performance of the MCG has also been impacted by conflicts between multiple levels of governance. While the councillors have been elected from an extended jurisdiction covering 207 sq.km their real authority is extremely limited. Only old Gurgaon (about 35 sq.km), which was earlier under the Municipal Committee, and 37 village pockets which were earlier under *Panchayets*, are now under the direct control of the MCG, informed the Chief Engineer of the MCG when interviewed on 5 January 2012. Vast new developments, all HUDA sectors, HSIDC industrial estates, privately developed residential enclaves, and business parks, are effectively out of bounds for the MCG. According to Councillor Nisha Singh, at least the HUDA areas should have been handed over to the MCG, with the formation of an elected body (Interview: 24 December 2011). However, there is neither any time frame, nor any agreement between the two bodies on how to account for the civil works undertaken so far and the extent of pending tasks. Thus, even after assuming office, the elected councillors are unable to deliver and are getting discredited.

While this political tussle continues, the quality of life for both rural and urban Gurgaon continue to deteriorate with severe infrastructure deficiencies and other consequences of uncoordinated growth, putting a question mark on its status as the icon of neoliberal urbanism in India.

5. Chapter Title Conclusion

Through the example of Gurgaon, this article discussed the difficulties of implementing global concepts like participatory planning and public-private partnerships in transitional economies of like India. Rapid change of a small rural town to a centre of industrial manufacturing and then, a global IT-BPO hub, in an unplanned manner, over a short time has resulted in a complex and heterogeneous urban pattern with overlapping layers of socio-spatial relations. The transformational journey has been further compounded by Gurgaon's geographic location, where economic growth has occurred due to its proximity to Delhi, but where the management and consequences of this growth are mediated through the local political channels.

The state government encouraged a joint approach towards city building. But the parastatal agencies in the name of facilitating the private enterprise led growth machine had relegated their planning responsibilities. The liberal land policy and minimal regulatory control enabled the developers to amass large land parcels from the peri-urban farmers, to create production and consumption spaces for the IT-BPO-led new globalised economy. Rapid growth in property prices enabled a large number of farmers to move away from agriculture and become stakeholders in the new urban economy. By channelising new economic opportunities, the real estate sector turned into the bridge between the global investors and the local state.

The outcome is a highly unsustainable urban landscape, marked by environmental degradation and stark disparities between planned and unplanned areas. The development pattern has followed the ease of land assembly, rather than a coordinated plan and did not create any space for public participation. The politics of this urban transformation is marked by high degree of social stratification. In this scenario, creation of a new municipal institution, through direct election by the people, instead of facilitating participatory decision making, widened existing social cleavages - rural-urban dichotomies, caste rivalries and power struggles between local and state level politicians,

The urban middleclass preferences for indirect control over local governance through civil-society activism face strong challenge from the rural pockets, which follow the route of direct electoral politics. The political system, dominated by the entrenched rural rich, has reduced the influence of the civil-society groups over the local governance of Gurgaon. This contestation between the urban middleclass and the rural rich has also overshadowed and made invisible a third category of citizens - the informal sector workers and migrant labourers. Not registered as voters, they are voiceless in the local governance system and routinely bypassed. The rural elites have captured power in the newly formed MCG, but its power to implement developmental works is extremely restricted due to a complex interplay of institutional deficiencies, horizontal and vertical power relationships between the parastatal agencies and caste centric politics. The incomplete devolution of administrative power from the state government has made the elected representatives of local government ineffective

Lastly, the process of Gurgaon's transformation illustrates the difficulties migrants face in accessing power to influence urban planning and policy arena, even if they are economically successful. The astronomical growth of Gurgaon was made possible due to the forces of globalisation, which created the IT outsourcing economy. Migrant workers – from upper middleclass technocrats to seasonal construction labours, are the back bones of this success. But their participation in the planning process faces stiff opposition from entrenched local interests.

Acknowledgement: I would like to thank Assoc. Prof. John Minnery for his very helpful comments on the earlier drafts of this paper.

References:

Biswas, SP 2006, 'Gurgaon: an Isolated Urbanism', paper presented to Dialogues: A Symposium on the Shaping of Gurgaon, Gurgaon, India.

Census 2011, *Population Census 2001- 11*, Registrar General and Census Commissioner, Govt. of India, Delhi.

Chatterji, T 2003, 'City Blights - Master Plans as Masterly Failures', *Times of India*, 8 September 2003.

Debroy, B & Bhandari, L 2009, *Gurgaon and Faridabad - An Exercise in Contrasts*, Freeman Spogli Institute for International Studies, Stanford, USA.

Delhi Development Authority 1962, *Master Plan of Delhi 1961-81*, Delhi Development Authority, New Delhi.

Jain, AK 2003, 'Actioning new partnerships for Indian cities', *Cities*, vol. 20, no. 5, pp. 353-9.

Joardar, SD 2006, '*Development Mechanism in Spatial Integration*', paper presented to 42nd ISOCARP Conference, Istanbul.

Jones Lang LaSalle 2010, *State of the Nation - Office, Retail, Residential*, Jones Lang LaSalle, Mumbai.

Mckinsey Global Institute 2007, *The 'Bird of Gold': The Rise of India's Consumer Market*, Mckinsey Global Institute, Delhi.

Reserve Bank of India 2012, *Handbook of Statistics on Indian Economy*, Reserve Bank of India, viewed 13 August 2012, <<http://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Handbook%20of%20Statistics%20on%20Indian%20Economy>>.

Shivaramakrishnan, KC 2011, *Re-visioning Indian Cities: The Urban Renewal Mission*, Sage, New Delhi.

Times of India 2011, *Rural folk call the shots in election*, Benett Coleman Group, viewed 4 July 2012, <http://articles.timesofindia.indiatimes.com/2011-05-16/gurgaon/29548321_1_polling-poor-turnout-booths>.

The Models of Urbanization and Their Impacts on Spatial Evolution of Built-up Areas—Case Studies of Cities in Shaanxi in Northwest China

Xiaojian Chen, Xi'an University of Architecture and Technology, P.R.China
XinYuan Li, Planning and Instruction Management Bureau of Xi'an Economic & Technological Development Zone , P.R.China
Ning Ding, Xi'an University of Technology, P.R.China

Abstract: Large-scale demographic changes driven by migration are already a fundamental force in urbanization and have different affect on spatial evolution of cities with different scales and different development condition. In Shaanxi, the gap between the household registration population and permanent residents increase gradually. Furthermore, it results in different effectiveness of planning practices, especially, to spatial development and layout because of the uncertainty in population. The paper describes the drivers of regional development, spatial evolutionary course of the built-up areas of the dominant cities, planning practice and their effectiveness etc.. The specific focus is on the relationship between population migration features and spatial evolution of built-up areas by the compared analysis of cities with different scales and different drivers. The results demonstrate that the central Shaanxi has been experiencing the increase of permanent residents. Especially, the mega city-Xi'an- has been experiencing a large number of permanent residents increase from every municipal regions throughout Shaanxi and other regions in Northeast China over the past several decades. For Northern and Southern Shaanxi, the population migration has complex characteristics. Different migration models make different urbanization models as well as different growth and spatial evolution characters of built-up areas of dominant cities. Furthermore, it results in different effectiveness of planning practices

1. Introduction

Nowadays, the bound between migration and population floating is confusion in China because of the more and more separation of residence and household registration place, and there are many terms related to them, such as permanent migration, temporary migration, migration as registered permanent resident, migration without registering as permanent resident, floating population and temporary resident population etc.. Although the statutory migration refers to the migration as registered permanent residence, the migration population in census and sampling survey does not mean that because of the complex and diversity of population migration and floating ^[1]. In this paper the authors use the same concept-including migration as registered permanent resident and residing in another place more than 6 months without registering as permanent resident-as that used in the census and sampling survey.

The migration is an social expression of spatial interaction of original places and destination, and it reflects the regional differences of economy level, investment strength and employment opportunity etc.^[2]. In China, the main migration directions are moving from rural areas to cities of different scales and moving from developing areas to developed areas while there are different characters in different regions. Migration between provinces is characterized by moving from Mid-west to some developed cities in costal areas, and migration within province is characterized by moving from rural areas and small towns and cities to the dominant cities and industries areas. What's more, the phenomenon of migrate workers intensify the diversity and complexity of population migration in China. Furthermore it results in the transformation and transition of urban and rural structure. Large-scale

demographic changes driven by migration are already a fundamental force in urbanization and have different affect on spatial evolution of cities with different scales and different development condition. Based on regional survey of Shaanxi province in Northwest China and case studies of Xi'an (in Central Shaanxi), Yulin (in Northern Shaanxi), Ankang (in Southern Shaanxi)), which has different development condition and bases, this paper explores the models of urbanization and their impacts on spatial evolution of regional dominant cities, especially the relationship between population migration features and spatial evolution of built-up areas by the compared analysis of cities in different regions with different scales and different drivers.

2. The basic characters of three regions in Shaanxi

Shaanxi province is located in Northwest China, and is divided into three geographical unit—loess plateau in Northern Shaanxi with rich mineral resources such as coal, oil, gas and salt mine resources, and Plain in Central Shaanxi with good location and development base, and Qinling Mountains and Ba Mountains in Southern Shaanxi with important eco-protection position and water resources.

2.1. Northern Shaanxi

The region borders western Shanxi province in the east with Yellow River in the middle of them, adjacent to Gansu province and Ningxia with the meridian ridge as boundary in the west, neighbor with Inner Mongolia in the North and connected with Tongchuan city of Guanzhong Plain in the south. Its scope includes Yulin and Yan'an administration areas which has 25 counties in all. Its total area is 93,000 square kilometers and its total population is 5546400 peoples. The dominant cities are Yan'an and Yulin city. The basic landform is loess tableland, beams, hilly, ditch, Plateau. The main industries in this area are energy carriers industry, coal making oil, coal-salt chemical, petrochemical. The Yulin and Yan'an are the services bases for immediate counties with leading secondary industries while the city proper mainly develops tourism, tertiary industry, and light industry. Shaanxi. Energy and chemical base in northern Shaanxi is approved as China National Energy and Chemical Base in 1998, and it is also one of the regions with rapid economic development since the late of 20 century in Shaanxi.

2.2. Guanzhong Plain

Guanzhong Plain, sits in central Shaanxi. It's the most prosperous place in Shaanxi province. Guanzhong Plain is close to Qinling Mountains in the south and neighbor with the Loess Plateau in the north. It includes five municipalities, such as Xi'an, Baoji, Xianyang, Weinan, Tongchuan and Yangling District. The resident population of Guanzhong Plain is 23497700 and its area is about 34,000 square kilometers. Guanzhong Plain is the main production base of grain, cotton, oil plants and high-quality fruit base in Shaanxi. What's more, it is also the most important industrial base in Shaanxi Province, and it has been formatted a relatively complete industrial system of agriculture, textiles, electronics, coal, petrochemical, machinery and equipment manufactory, energy etc., especially in the equipment manufacturing industry and high-tech industrial development with five different levels of high-tech development zone, where three is at the state-level. Guanzhong plain is the important research base for national aerospace, aviation, machinery, electronics, instruments etc..

2.3. Southern Shaanxi

Southern Shaanxi contains Hanzhong, Ankang and Shangluo three administration areas which have 25 counties in all, and dominant cities are Hanzhong, Ankang and Shangluo city. The resident population is 8382000 by the end of 2011 and has a total area of 70,200 square kilometers. Sorthern Shaanxi is extremely rich in water, heat, forest, grass resources and local products, mineral and other natural resources, and it also very rich in hydropower

resources since it is the birthplace of the Han River which is the largest tributary of the Yangtze River. In recent years, southern Shaanxi has concentrated on the building the core of circular economy gathering area, and formed the new ideas of developing three leading industries of bio-processing, eco-tourism, and new materials. The population density is sparse compared with the Guanzhong Plain because of the natural condition limit, and it is the radiation source of population migration. Table 1 shows the basic Characters of three major regions in Shaanxi Province.

Table 1. The basic Characters of three major regions in Shaanxi Province

Regions	Total population	Total area (square kilometer)	Dominant city	Major industry
Northern Shaanxi	5, 546, 400	93,000	Yulin, Yan'an	Agriculture, energy and Chemical Industry etc..
Guanzhong Plain	23, 497, 700	34,000	Xi'an, Baoji, Xianyang, Weinan, Tongchuan, Yangling District	High-Tech Industry. Modern Equipment & Manufacturing Industry, Tourism etc.
Southern Shaanxi	8, 382, 000	70200	Hanzhong, Ankang and Shangluo	Biological processing, Ecotourism, New materials, etc.

3. The population migration Characteristics of Shaanxi

The regional distribution of population in Shaanxi Province is significant differences, and display the features of dense population in Central Shaanxi and sparse in the North and South. According to the Sixth Census, the resident population of the Central Shaanxi, Southern Shaanxi and Northern Shaanxi accounted for 62.69%, 22.47% and 14.84% respectively. In terms of the population distribution of administration areas, compared with the year 2000, the population proportion in some rapid socio-economic growth areas, such as Xi'an, Yulin, Yan'an and Yangling have increased to varying degrees, especially in Xi'an, the population proportion of the province rose from 20.56% in 2000 to 22.69% in 2010, increased by 2.13%. The features of dense populated in central Shaanxi and sparse in the North and South Shaanxi become more striking.

Table 2 demonstrates the migration within province is much larger than between provinces and the ration of migration population to residence population is increase rapidly with the social and economic development.

Table 2 The migration ratio in census in Shaanxi Province

Time	The ratio of migrate people to total residence population (%)	The ratio of migration between provinces to total migration (%)	The ratio of migration within province to total migration (%)
1990	0.3	30.59	69.41
1995	1.4	29.95	70.05
2000	7	18.01	81.99

Sources: the fourth and fifth census and sampling survey

The number of migration population is large, and the trend that the population from rural to urban area, and from less developed areas to economically invigorating regions and big cities is more prominent. According to the Fifth Census data, at 0:00 on November 1st, 2000, the residence population was 36,050,000 in Shaanxi province, and migrated population was 3,405,600, accounted for 9.5%; and the migrants lived mainly in Xi'an, Weinan, Xianyang and Baoji (four cities occupied 58%), as illustrated in figure 1. The migrants were born inside the province mainly choose to live in Xi'an(19%)、Weinan(15%)、Xianyang(14%)、and

Baoji (10%) and the migrants born outside the province mainly choose to live in Xi'an(49%)、Weinan(9%)、Xianyang(11%)、and Baoji (12%) too.The main reasons of population migration in Shaanxi Province are as follows: study, business, marriage, moving, employment, job transfers and seek help with relatives and friends in addition to the large amount of rural surplus labor and the great income gap between urban and rural area. Xi'an has excellent resources for primary and secondary education, and many universities gathered here, which attract those who from Northern Shaanxi and Central Shaanxi want the best education for their children. They purchase house and send their children to school in Xi'an. They mainly choose the central area and suburb of Xi'an to settle down where have educational resources, and migrate follows the chain migration patterns. The chain migration is the most common mode in China. The Social Relations Network has become the main factor of location choice for present China's floating population. Migrants make the decision and get the information about the new places from kinship, village relationship and interpersonal relationship net, rather than from the government and the market. On November 1st, 2010, the floating population of Shaanxi for 5,894,400 people, accounted for 15.79% of residence population, compared with 2000, the floating population increased by 1.5 times, accounted for the proportion of the residence population advanced 9.1 percentage point. 60.1% of the people from other provinces to live, work, study and trade in Xi'an, 12% in Yulin for natural resources development. The outflow population of the region in Shaanxi can be viewed that Southern Shaanxi took up almost half of the migration, Hanzhong and Ankang accounted for 23.93% and 19.45% respectively of the Southern Shaanxi; Xianyang, Weinan and Baoji accounted for 12.11%,10.95% and 9.01% respectively of the Central Shaanxi, and these five cities occupied 75.45% of the total outflow population. For the situation of population migrating in the province, intercity floating population was 1,015,200, more than 80% fixed upon the Xi'an as a migrant destination.

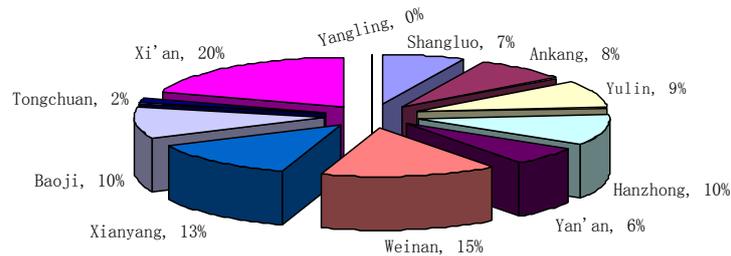


Figure 1. The distribution of immigration of Shaanxi in 2000

Figure 2 shows the number change of residence population in different administration areas according to the fifth and sixth census, and it demonstrates that the residence population of Xi'an, Baoji, Yan'an and Yulin increase while that in other administration areas decrease.

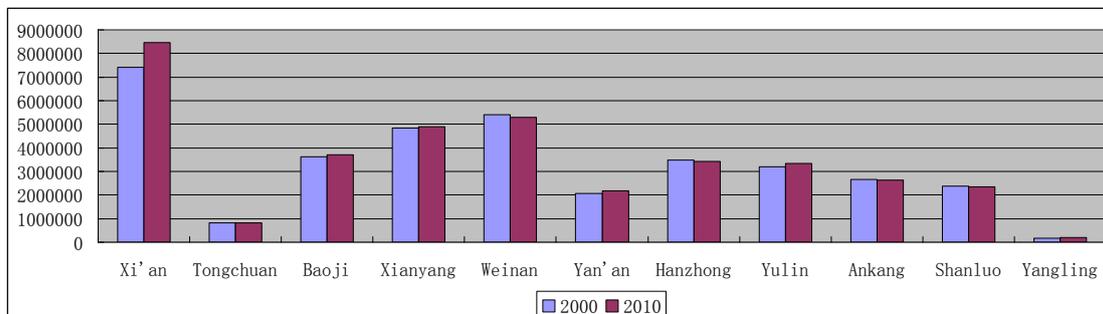


Figure 2. The residence population of the fifth and sixth census

4. Migration and urbanization model in Shaanxi

Demographic changes takes on different characterise in these three areas. General speaking, the central Shaanxi has been experiencing the increase of permanent residents. Especially, the mega city-Xi'an- which is located in central Shaanxi and is the dominant city of Shaanxi, has been experiencing a large number of permanent residents increase from every municipal regions throughout Shaanxi and other regions in Northeast China over the past several decades. For Northern and Southern Shaanxi, the population migration has complex characteristics. There are coexist that people with medium income and above that level who live and work in cities in these regions purchase house in megacity-city and become the temporary residents at this time, while people who live and work in rural areas purchase house or rent flats in dominant cities in these regions and become the self-urbanization residents^[3]. Figure 3 shows the migration direction in Shaanxi province

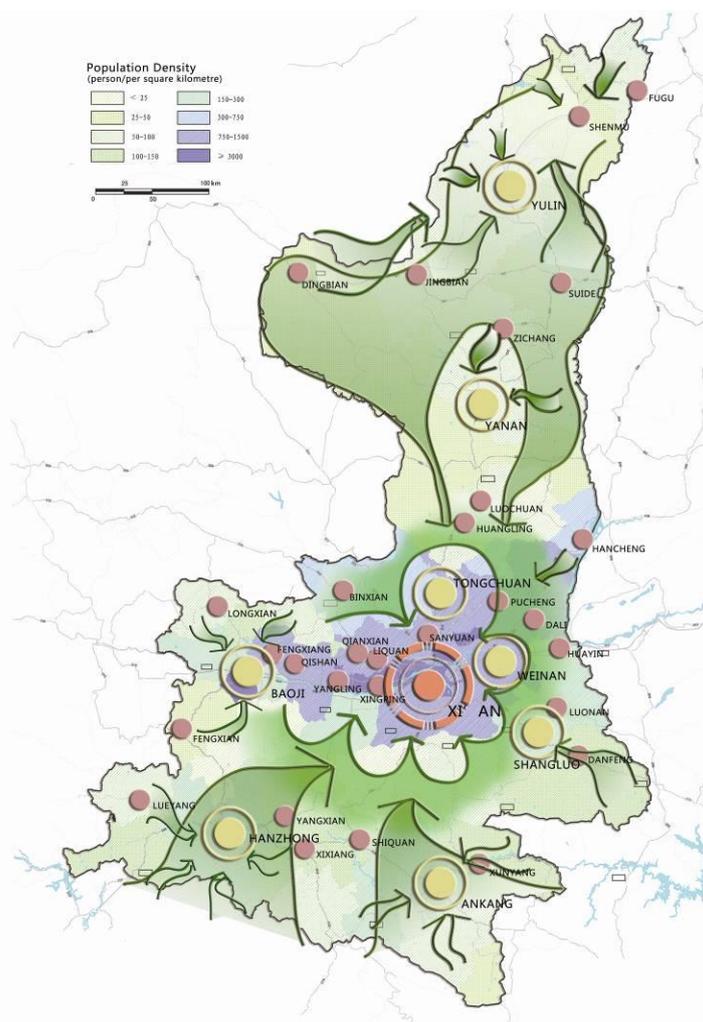


Figure 3. The migration of Shaanxi province

We take Yulin, Xi'an and Ankang as case study. The population migration of Yulin administration area is dominant city and industrial areas oriented. Town population of northern six counties is 1.63 times as that of southern six counties because of good natural condition and development potential. The intensity characteristics of population spatial distribution are consistent with the intensity of GDP spatial distribution. Yulin population migration is mainly composed of two parts, one of them is the middle-income class people migrate to the city of Xi 'an, and they purchase house in Xi 'an for children or themselves.

The other is a large number of agricultural surpluses labour transfer from rural areas to industrial areas or to other places where can provided employment opportunity or good living condition. In generally, their transfer destination mainly includes two types, one of which is to transfer to dominant city within the regions; the second is to transfer to various large industrial and mining within the administration area, such as Shenmu, Fugu, Jingbian and other places. According to the survey the ratio of agricultural surpluses labours that stay in this region to those moving outside the region is roughly 6:1. In terms of the spatial distribution, northern region is the main attraction place, accounted for about 80% of the total transfer surpluses labour. Especially the second industry's ability of the northern counties to attract and accommodate rural labour is better than six southern counties. Survey found that most of the surpluses labour who move to the regional dominant city would like to stay there forever, and urbanization has the characteristics of relatively long-term and stability; while the surpluses labour who move to the dominant towns in county would like to stay there temporary, and urbanization has the characteristics of seasonality and volatility. Figure 4 shows the migration direction of agriculture surpluses labour in Yulin.

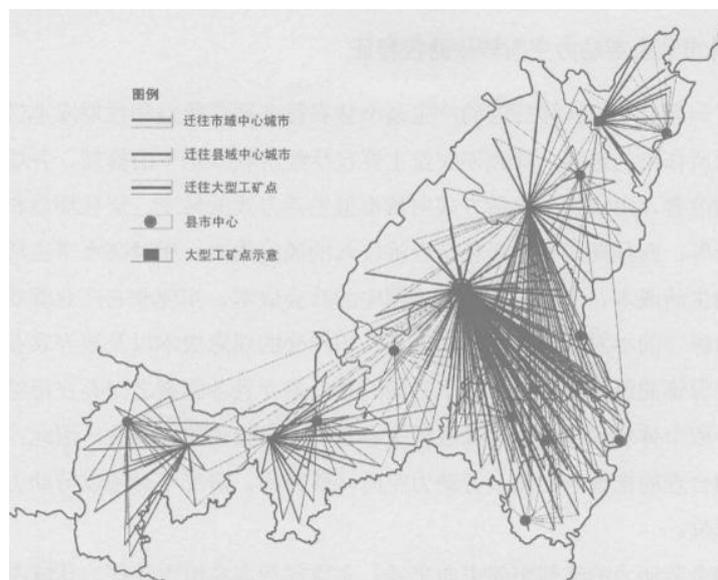


Figure 4 the migration direction of agriculture surpluses labour in Yulin

Sources: Hujia, *The dissertation of Xi'an University of Architecture and Technology*. 2010

For Ankang, that takes on different story. Some people with medium income or above that purchase house in megacity-city Xi'an and become the temporary residents. Agricultural surpluses labour transfers to dominant city within the regions or moving outside the region. Especially they move to Eastern China and stay there for a relatively long time and back at festival season. Figure 5 shows the change of residence population in Ankang in year 2000, 2005 and 2010. there are a little decrease of residence population that stay more than 6 months throughout the whole areas because of the difficult living and production condition in most of the mountain areas. The Ankang city proper became the main attraction place because of the better living condition and infrastructure within the administration area, but the attraction is limited at this moment compared with Megacity Xi'an and rapid development city Yulin.

Xi'an, as the dominant city of Shaanxi province and one of the mega-cities in China, has marvellous attraction for the people all over the province, even some people in Northwest China. The migration is characterized by coexist of permanent residence and long-term floating. From year 2000-2010, the net immigrant population as registering as permanent resident in Xi'an is 65.7900 totally while the resident population living longer than 6 months is 1.06 million. We can see that clearly from the Figure 6 and Table 3. Figure 6 shows the migration as registered permanent resident. The gap between the household registration population and permanent residents increase gradually. The number is much smaller

compared with the increase of resident population living longer than 6 months. That means there are big gap between the two statistics. Furthermore, it means that lots of population migration is Non-household registration population migration, but they stay much longer than 6 months as long-term floating. The bigger the city, the prominent the phenomena.

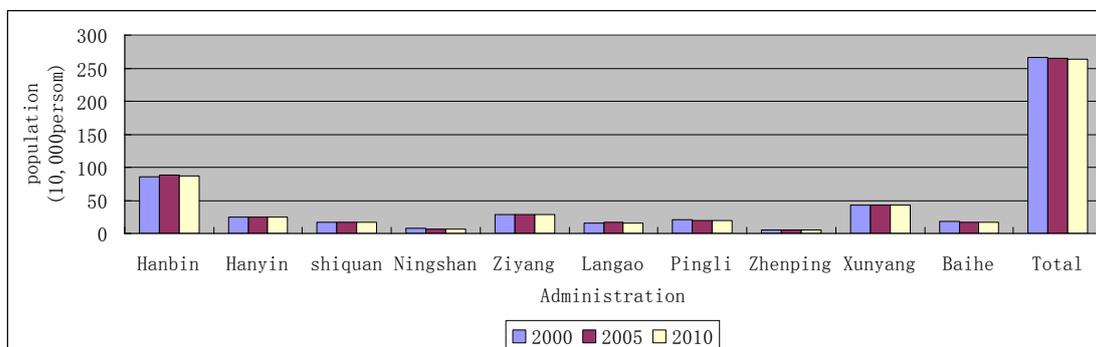


Figure 5 the change of residence population in Ankang in year 2000, 2005 and 2010.

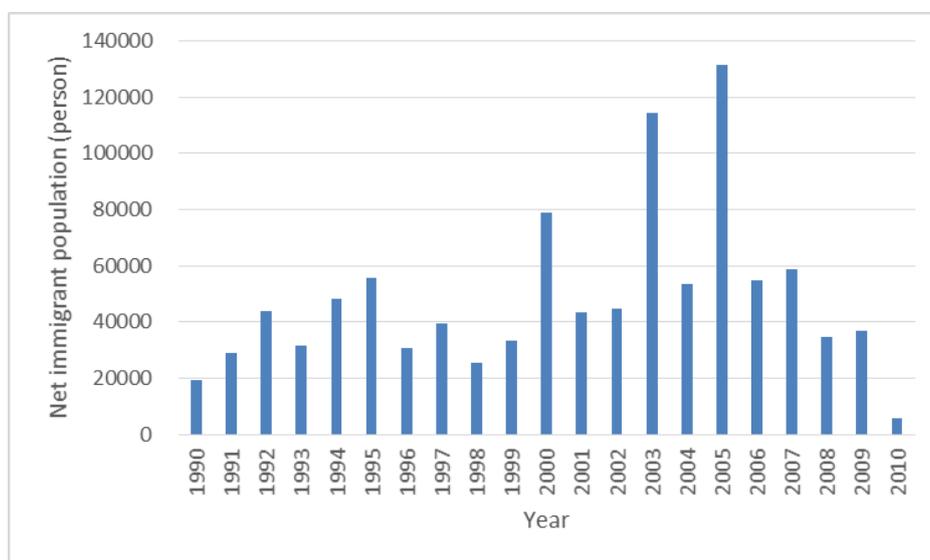


Figure 6 the migration as registered permanent resident in Xi'an

Table 3 the resident population and the Increase number

Year	residence population (10,000 person)	Increase number 10,000 person /per year
2000	741.14	
2005	806.81	67.67(5 years together)
2006	822.52	15.71
2007	830.54	8.02
2008	837.52	6.98
2009	843.46	5.95
2010	847.41	3.95
2011	851.34	3.93

Sources: Yearbook of Xi'an statistic.

According to the analysis above, we can conclude that migration in these regions means something more than that move from one place to another with registration as resident population, and it also means staying in other places without registration as resident population. The diverse migration models result in several migration flows and different urbanization model in different regions, for example, seasonal agriculture surplus labour and vocational and weekend migration population with medium income and stable job in other cities. All of this accelerates the complexity and make the population difficult to forecast. The Table 4 lists the migration characters in these three regions. Radial migration pattern is evident throughout the province, especially in rural areas. Both convergence and radial migration pattern have developed which made the Xi'an a powerful convergence centre. The industrial areas in Northern Shaanxi are as new attractive areas.

Table 4 The migration characters in these three regions

Regions	Migration Characters	Migration Impulses	The migration destination
Northern Shaanxi	Strong floating character: Some people purchase house in megacity-Xi'an and become the temporary residents. Agricultural surpluses labour transfer to dominant city within the regions or to various large industrial and mining within the administration area,	Employment opportunity, Education level, Living condition	Xi'an, Dominant city and towns, Industries areas
Guangzhong Plain	Coexist of permanent resident and long-term floating	Higher income, Better living condition	Xi'an or Towns immediate village with employment opportunity
Southern Shaanxi	Some people purchase house in megacity-city and become the temporary residents. Agricultural surpluses labour transfers to dominant city within the regions or moving outside the region.	Employment opportunity, Education level, Living condition	Xi'an, developed areas in costal areas.

5. Spatial evolution of the built-up areas of the dominant cities in three regions

Like most of the China's cities, the dominant cities in Shaanxi experience expansion continuously. Figure 7 shows the change of built-up areas of Xi'an, Yulin and Ankang. Xi'an grow fastest, and then the Yulin and Ankang grow is slower and stable.

The expansion of built-up area of Xi'an is radical. The main expansion direction is Southwest and North before 2002, and there is expansion in every direction since the beginning of 21st century.

In Yulin, from 2000 to 2007, the expansion in SS and S and SSW direction reach $292.08 \text{ hm}^2 / \text{year}$, $1004.49 \text{ hm}^2 / \text{year}$ and $276.05 \text{ hm}^2 / \text{year}$ respectively. And the expansion amount in this three direction account for 73.75% of total expansion amount. The extension in S direction accounts for 47.13%. The direction in east and north is at a lower level whether the expansion proportion of total land, or the amount of expansion. From 2007 to 2012, the expansion in SSE, S, and SSW direction is still larger. And the sum exceeds 50% of the total extension. What's more, the expansion rate is increasing each year. The expansion amounts

in NNE、NWW、NW and SEE direction increase by 3.8, 13.2, 14.3 and 16.7 times separately between 2007-2012 compared with those between 2000-2007. It shows that the South direction is still the main expansion direction while the North and West expand evidently.

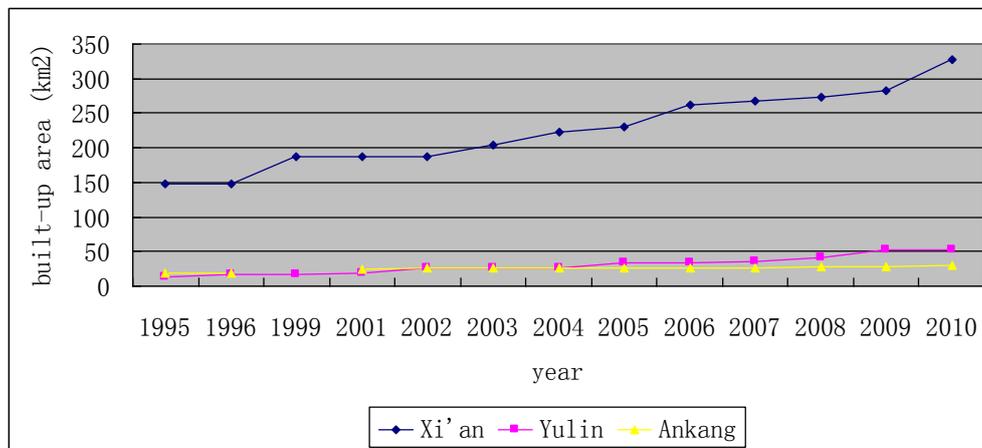


Figure7 the built-up areas of Xi'an, Yulin and Ankang

Sources: The yearbook of China's cities statistics.

For AnKang city, the spatial expansion in Northwest direction keep the leading position from 1985 to 2011. From 1985 to 2000, the increase amounts in Northwest direction reached 1.48 square kilometers. The increase amounts in Northern direction reached 0.82 square kilometer. The northeast direction growth was smallest, it was nearly 0. From 2000 to 2007, the expansion in Northwest direction was largest and the increase amount reached 2.55 square kilometers. The expansion in east direction accelerated and increased by 1.38 square kilometers. The expansion in North direction slow-down compared with the previous period. The northeast direction grows slowly because of the topography limit. From 2007 to 2011, the fast growth direction is still Northwest which increased by 1.22 square kilometers. However, the rate of expansion drops nearly 1/2 compared with the previous period. In this time, West direction has rapid development, which increased by 0.47 square kilometers.

6. The implement efficiency of plans in dominant cities

6.1 The implementation efficiency of population plans in Yulin, Xi'an and Ankang

The latest revision for comprehensive plan for these three cities was around 2008. Mega-city Xi'an has been experiencing the rapid population increase since the late of 20 century because it is the powerful convergence centre. Yulin and Ankang, as the dominant cities in Northern Shaanxi and Southern Shaanxi, the population is inconsistent with the planning prediction because different social and economic development condition and different population migration model. In Year 2000, there are less than 200,000 people in Yulin Built-up area. It is forecast in comprehensive plan the population in built-up area will be 250,000 in 2010, and 420,000 in 2020. But in 2007 the plan was revised because the population in 2006 is 350,000. The population tends to be underestimates in Yulin. Ankang, the increase of population and built-up areas is slower compared with Yulin. Table 5 shows the population forecast and practical increase in Ankang. And it demonstrates that population increase keep within the expectation. Sometime, the population tends to have been overestimates in Ankang. The reasons are that the impulses for Ankang are as not stronger as Yulin. Employment opportunity shortage results in people moving outside the region.

Table 5 The population forecast and practical increase in Ankang

1979's plan			1987's plan			2002's plan		
57000 People In 1979	Forecast the population will be 130,000 in 1985	Forecast the population will be 150,000 in 2000	140,000 People in 1987	Forecast the population will be 150,000 in 1990	Forecast the population will be 300,000 in 2000	244,000 People in 2000	Forecast the population will be 300,000 in 2005	Forecast the population will be 500,000 in 2020
The population within the same area in 2008 is 148981			The population within the same area in 2008 is 289451			The population within the same area in 2008 is 321144		

6.2 The implementation efficiency of land use plans in Yulin, Xi'an and Ankang

Different migration models make different urbanization models as well as different growth and spatial evolution characters of built-up areas of dominant cities. Furthermore, they result in different effectiveness of planning practices, especially, spatial development and layout because of the uncertainty in population.

Beside the population increase, the expansion directions are also difficult to forecast, especially, for the rapid development city. Figure 8 shows the planning boundary and the practical growth boundary in Yulin, Ankang and Xi'an. As we see from figure 8, the dominant cities in these three regions have different spatial expansion because of different social and economic development condition and different population migration model. The development and expansion of Yulin and Xi'an take on in consistence with comprehensive plan. The area of built-up area exceeds plan's expectations. Their driver forces are rapid economic growth and the construction of new development zone and services bases.

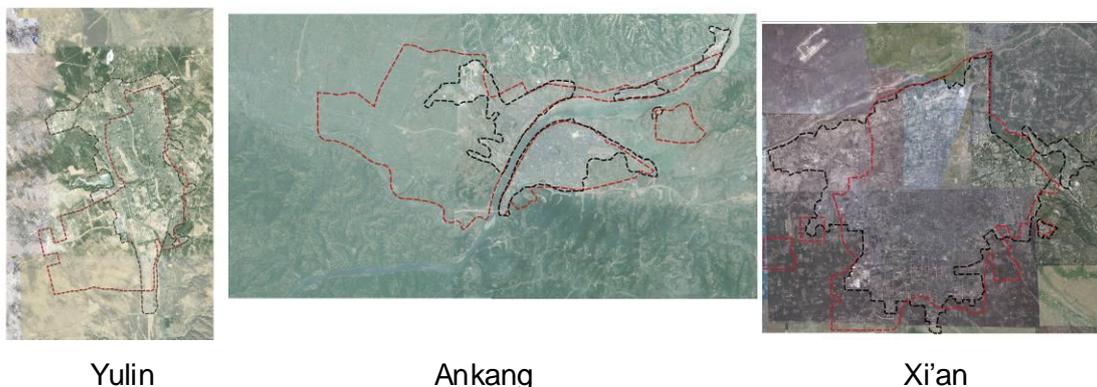


Figure 8 The planning boundary and the practical growth boundary

Note: Red line represents the plan boundary and the black line represents the practical boundary in 2012.

6.3 The relationship between migration models and spatial evolution of built-up areas

There are stronger relationship between migration models and spatial evolution of built-up areas. Different migration model results in different population convergence in region. The migration models are affected by several interconnected forces. One is the rapid economic development and the others are better employment and education opportunity etc.. What's more, the rapid population increases, especially the population without registration as resident population has played an important role for spatial evolution of built-up areas. The gap between the household registration population and permanent residents results in different effectiveness of planning practices, especially, to spatial development and layout because of the uncertainty in population. And it makes the plan prediction more difficult.

Figure 9 shows the GDP Growth rate in these three cities, and if we analyze it together with the spatial evolution of different cities, we could find that economy is the main driver force for these three cities. But the strength of driver force on spatial evolution has big difference, for example, the effect on Yulin is much strength than Ankang. Economy development is important force to shape the city's expansion. One the one hand, economic development provides more employment opportunity and spatial demand. Furthermore it results in population migration. One the other hand the construction of industry areas needs land in itself.

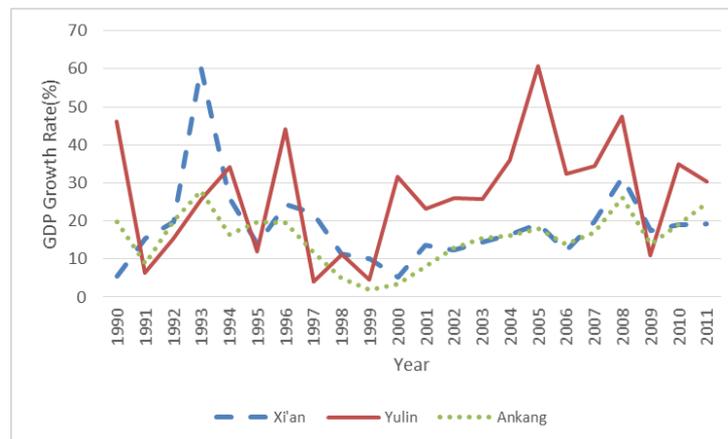


Figure 9 the GDP Growth rate in Yulin, Xi'an and Ankang

7. Conclusion

From the analysis above, we can draw the following conclusion.

[1] The features of dense populated in central Shaanxi and sparse in the North and South Shaanxi become more striking.

[2] The number of migration population is large in Shaanxi, and the trend that the population from rural to urban area, and from less developed areas to economically invigorating regions and big cities is more prominent.

[3] The central Shaanxi has been experiencing the increase of permanent residents. Especially, the mega city-Xi'an- has been experiencing a large number of permanent residents increase from every municipal regions throughout Shaanxi and other regions in Northeast China over the past several decades. For Northern and Southern Shaanxi, the population migration has complex characteristics.

[4] Migration in these regions means something more than that move from one place to another with registration as resident population, and it also means staying in other places without registration as resident population. The diverse migration models result in several migration flows and different urbanization model in different regions,

[5] The gap between the household registration population and permanent residents results in different effectiveness of planning practices, especially, to spatial development and layout because of the uncertainty in population. And it makes the plan prediction more difficult.

[6] Different migrations models call for new ways of thinking and new models of planning practice

Foundation: National Natural Science Foundation of China, No 51178371.

References

[1] SUN Fubin, LI Huazu. (2000) "On Classification of Permanent and Temporary Migration of Population in China", Journal of Xi'an Jiaotong University (Social Sciences). VOL 20, No 1 : 53~55

- [2] DING Jinhong, LIU Zhenyu, CHENG Danming, LIU Jin, ZOU Jianping. (2005) "Areal Differentiation of Inter-provincial Migration in China and Characteristics of the Flow Field". *Acta Geographica Sinica*, Vol 60, No1:106-114
- [3] Xiaojian Chen, Chuan Qin. (2011) "Urban Spatial Evolution and Its Drive Forces of Medium and Small Scale Cities in Northwestern China". *UPI* Vol.26, No.1. 37-40
- [4] Roger Prestwich, Peter Taylor.(1990). *Introduction to Regional & Urban Policy in the United Kingdom*[M]. Longman Group UK Limited.

AFRICA. FROM SHOULD TO COULD

New model of planning practice required addressing the increase in migrations. How to integrate informal mechanisms into the urban management of the African culture. (The uncontrolled independence of Peter Pan's shadow)

Antonella Contin, Massimo Della Rosa
Measure and Scale of the Contemporary City Laboratory
Architecture and Urban Study Department
Politecnico di Milano, School of Architecture and Society antonella.contin@polimi.it
Phone/fax numbers inc. international dialing code: +39-02-2399-5527

Pedro B. Ortiz Castaño
Senior Urbanist, Consultant of World Bank
Measure and Scale Laboratory
Architecture and Urban Study Department
Politecnico di Milano, School of Architecture and Society pedro.b.ortiz@hotmail.com
Phone/fax numbers inc. international dialing code: +39-02-2399-5527

Metropolitan management methodologies confronting new challenges: shaping rapid growth in a context of informality, scarcity and misgovernment.

Metropolitan architecture methodologies facing the new urban paradigm of the *non optimal city*. The term *post-optimal city* is used to recall a post-functionalist dimension of the unfolding (new) size, scale and technology in the city.

Theme: the research involves the transformation of the settlements, which are at the fringed edge of the metropolis (Dar es Salaam in this case), constantly changing, due to the fact that a huge number of migrants come there from the countryside, and characterized by a variable degree of informality. The area project falls within a new typology of formal-informal interface that we want develop as a gradient of formality. We present a study of a way to regulate the growth: an evolution in scale. We applied the Reticular Matrix Model System that is a development model rather than a formal model. It's a study of a design method that allows us to describe and design urban phenomena related to the change of scale, which determines the mutation of types of morphologies of urban spaces and landscapes.

The research question: We started the Dar Es Salaam New Centralities analysis with a statement: the need for a cultural "jump" should identify a range of new elements and relations among elements in the urban context, rather than simply upgrade the instruments of intervention and investigation. So we are speaking about the need of a methodological indication for the development of a new settlement. Our vision may envisage a sustainable relation between green and grey infrastructure, when green is intended as the hydro-geological system of the territory. A strong economic attractor related to the infrastructure system should therefore foster the reversal of spontaneous settlements back into legality, providing them with services that could improve the sustainable level of the entire city.

Methodological outlines: The project area is a point between different landscapes and represents strong metropolitan dynamics, which re-connect sides through the design of the areas of transition. If we focus on the urban realm we must understand how to integrate, into the urban management of the African culture, the informal/illegal mechanisms of the migrants

to occupy and build the agricultural areas. It is necessary to integrate scales, disciplines and governance in the physical urban management. We promote a substantial change in the urban/rural relation. A formality-gradient type, able to capitalize on its city-centre proximity its advanced services, will be determined especially in relation to new mobility structures. Such strategic device, conceived through the analysis of the anthropological signs found into the informal city fabric rules of construction, should also be able to communicate with the agricultural landscape that not only has the potential to provide products for consumption and sale to local communities (urban agriculture), but also becomes an element of urban regeneration. The informal areas quality of life consists in cultural identity, social solidarity, which are factors of productivity and efficiency of the society as a whole. The approach is no longer to prosecute and illegitimize informality. It is a real change of paradigm. Informal settlements are like 'informal' numbers, as our approach to formality will go. If we follow the analogy, even if they imaginary numbers 'do not exist' they are extremely relevant in mathematics and physics to understand a series of phenomena and to be able to efficiently deal with them. Understanding and incorporating the 'imaginary' informal to the general development theory will help in great manner to economy development, social integration, urban sustainability and governance equilibrium, and to understand and deal with the 'formal' numbers.

Outcomes: Urban informal-formal integration. We present a study of a way to regulate the growth: an evolution in scale. It's a study of a design method that allows us to describe and design urban phenomena related to the change of scale, that determines the mutation of types of morphologies of urban spaces and landscapes. The Green and Grey infrastructures, Housing areas, Social urban centralities and Productive areas can be design as a Pattern Language mechanism of urban growth in a context of an Urban Design Guide. This will provide a framework for the formal-informal dialogue. The challenge, then, is not only for Planning and project Design. It is in the metropolitan architecture management side also. Though Planning and Design must be made with Metropolitan Architecture Management capacities in mind. That would be essential for an effective Planning and Designing. They are part of the same process and coordination is the means for success.

A discussion on relationship between migration, informality and the inability of governance structures to manage the phenomenon

The world will become far more urban in the next 30 to 40 years than it is now: 2 billion people will move to cities. However, this urban growth is only partially explained by rural-urban migration, but increasingly by natural urban population growth. William Cobbett (2008) highlights that the public authority doesn't know how many people live in the slums or illegal settlements, has no idea where they came from, has no knowledge of their needs. Manal El-Batran and Christian Arandel (1998) argued that most visible informal settlement on the periphery of Cairo has developed mostly on private agricultural land and, less frequently, on publicly owned desert land.

So we could say that the spontaneous urbanization occurs because of the fact that vacant formal housing units are not affordable to most urban dwellers, which are new in-urbanized citizens (very poor indeed) from one side. From the other side, nevertheless, the cities of the developing countries are not able to respond adequately to the challenges posed by a new bourgeois population growth, to their need for new infrastructure, to the provision of grossly inadequate housing and to the lack of basic urban services.

This fact leads to the proliferation of slums, a growing number of urban poor and a general deterioration in the quality of life in urban centres, but to the illegal settlements also. For a growing number of these cities, the poor planning has remained the main obstacle for the sustainable growth and the development of healthy living environments, where the prospect of an adequate life and production continues to elude especially the urban poor. According to

Cobbet, we can look at it as social insensitivity; some people look at it as private sector entrepreneurial behaviour. In fact, these are how settlements developed, very often outside of the administrative boundary, so that the local authority might not see these informal developments as its problem. The local government often provide inferior services and very often the authority acts with urgent projects as a short-term solution: urgent but not important projects into a *long duree*. Cobbet argued that the danger becomes because the informal settlement of today becomes the ghetto of tomorrow. The first choice, Cobbet said, is that the informal area will be accepted, upgraded, eventually becoming a suburb and a long-term part of the city. The second choice for the public authority is to ignore the informal settlement, fight it, and let it become a slum or an illegal settlement, very well rooted on the ground and sometimes into a corrupt system of governance, in which the entire city faces a decreasing of energies until the cultural one cause inside it's not possible to take a "social elevator" to change the own social position.

The post-optimal city era.

The coherence between formal settlement and the illegal one: ecologies of the metropolitan forms for the culture of a local identity open to the global integrative or hospitable

In his volume *The ecological thought* (1988), Edgard Morin introduced the concept of Ecology of the form, not only related to parameters of efficiency or effectiveness from the technical or economic point of view, but as a fundamental constituent of the organization of the life processes and structures. This is why, regarding the city and the architecture complex contexts, we prefer to speak about *ecologies of the forms*. Our study, in fact, concerns the foundation of the generative processes of the metropolitan architecture forms, which today are a mixture of legal and illegal elements, to overcome an only technological approach. The first act of the project, then, is the detection of the elements that make up the complex context of the metropolitan city scale, in order to determine the relationship with the generative process that is not only a material device, but a cultural one, tied to the physical forms of the space: is the meaning of the question that sets the result. The process, for us, is morphogenetic and only after the techniques intervene.

The aims, then, are the socio-economic development of the territories, through metropolitan relations into the new metropolitan space system (Ortiz, 2013), the creation of innovative processes of integration, compliance with qualitative / quantitative standards for an infrastructural revival, also through the development of new sources of renewable energy and intermodal transport.

A sustainable growth, in fact, that provides an increase in demand of space with a low environmental impact, requires new interpretation and planning tools and project. It is necessary, however, to rethink the network of energy-production, distribution and location-self-sustaining for new settlements, such as an integrated system of local identity and global inclusion, between rural and urban economy, the energy expenditure reduction and conversion: food and sustainable energy for the urban metabolism as a project to support the integration between town and its territory, through the redefinition of the physical issue of new urban settlements and their architecture.

Our research concerns the definition of a cosmopolitan globalization, that does not negate the places, rather then strengthens them, elevating them through a leap in scale: enhances ancient positions and creates new ones; leaves the other decaying, making them to be born as symbolic mediators (sustainable heritage). The new metropolitan architectural individuality, thus, are related to their position, but re-read at a different metropolitan scale.

A metropolitan architectural identity, not static and understood as a dynamic process, is determined, then, as a link between the different scales. This process tends to make similar

the people that have the same values. They are represented with the same gestures, which trace into the ground the signs of the work of the man who transform his territory. Only referring to shared values it is possible to integrate or host different migrant nationalities, without determining their marginalization.

Our research, therefore, aims at defining how, in the growing medium and small cities, is possible to balance both the macro / micro-economic factors and the spatial structure of the cities within the cultural ones: the background shape that consists of residential areas, public spaces and landscapes.

We discuss the relationship between the new settlement, activities and physical space and how this relationship is differently formed in different cultures and how different activities determine the needs of movement, the new settlement with its gradients of formalities and co-presence with the existing assets. Finally, we need to determine the way in which the models of integration between infrastructure and physical space influence the location of the various settlements, classes and social groups into the city, to resolve the pathology of the settlements and the public sphere.

Due to the fact that the spatial form must be understood as a key factor that helps to set up models of sustainable urban metabolism, of integration or vice versa of segregation into the city, the starting point of this work arises from the need to define the contemporary city within its territory, through a clarification of a new metropolitan scale of intervention, thereby addressing:

- a. economic and social aspects
- b. institutional aspects
- c. social consensus
- d. local and global sustainability values and their influence on the concept of citizenship

Conclusively, the framework of our research coincides with the formal and structural dimensions of urban scale linked together the metropolitan scale. The need of a cultural "jump", then, should identify a number of new elements and relationships in the metropolitan context, rather than simply update the tools of intervention and investigation. For this reason, we refer our research to the Reticular Matrix methodology (Ortiz, 2013). This means a better definition of the structural model, the backbone of this reality, to show the presence of some gaps in urban development and cultural awareness of such phenomena.

If, as a matter of fact, a strong economic attractor related to the infrastructural system should foster the reversal of spontaneous settlements back into legality, providing them with services that could improve the sustainable level of the entire city, nevertheless as a matter of concern, according to the European tradition related to the studies for the transformation of Frankfurt (1928) and the re-integration of one million of inhabitants in Berlin into self-sufficient Siedlungen (1932) , or the realization of the Italian "Città di Fondazione" (1933) that were inspired by the plan for the Tennessee Valley Authority, we think it is helpful to draw a consistent attempt to exceed the only hygienical and welfare targets that continue to characterize the interventions for the informal neighbourhoods of the cities in the developing world, towards a productive revolution that could be triggered into the heart of the metropolis from a project of true integration between green and grey infrastructure and new urban gradient of formalities: therefore able to integrate the urban agriculture, within the new typological concept.

The development paradigm for a formal / informal integration into the metropolitan city scale

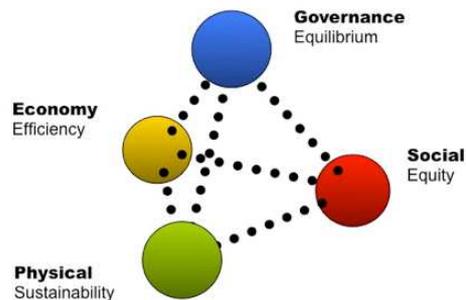


Figure 1: Tripod Development Paradigm. *Components and Objectives*

Development policies have to address three sets of components: Social, Economic and Physical, under the intervention of the fourth one, Governance. Each component has a clear objective: Economics' objective is Efficiency, Social one is Equity, Physical (Environmental) is Sustainability. These components are in conflict. Economic efficiency requires concentration to benefit from the 'economies of scale' phenomena, but Social equity requires dispersion to provide quality of life to the most marginal population. Economic and urban developments require resources and infringe in the limited environmental assets. Many other conflicts as share of consumption goods and access to health or education are as well part of the development formula. All those conflicts have to be solved by Governance. There is not a technical objective formula to solve them. It is Governance that plays that role and the objective of Governance is equilibrium among the objectives to achieve the necessary dynamic balance for development. This is the basic rule applied in developed societies and can take the mnemotechnic analogy of a Carbon Atom or a three legged stool, a tripod. The tripod analogy expresses rather better than the Carbon Atom the fact that it is Governance the component that has to control the equilibrium between the other three. It is the seat that holds together the three legs, as Governance does.

1. The Sub-components of the paradigm

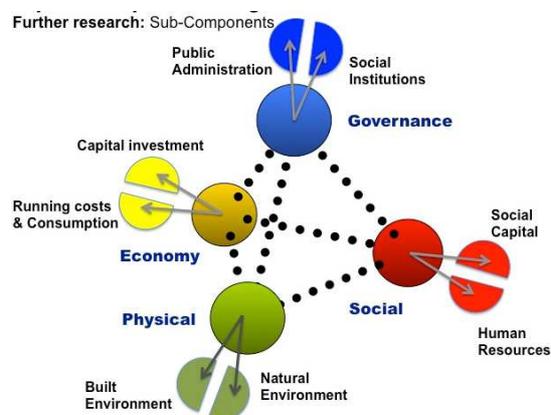


Figure 2: Tripod Development Paradigm. *Further research: sub-components*

Each component is a discipline on its own. It cannot be oversimplified. Nevertheless for the purpose of practical development policies decision-making we can discern among the many subcomponents of each discipline the ones, the dichotomies, especially relevant for Metropolitan Management and Planning. The following subcomponent set is open to debate but as we are going to see in the following discussion of the paper it allows for some analytical approach to the issues concerned and the capacity to arrive to some conclusions and make some proposals. It is this frame of mind, and the knowledge that further research should be undertaken that we present the following scheme.

The Subcomponents are:

a. Social

- Human Resources: The accumulation of knowledge from the population.
- Social Capital: The capacity of that population to have a multiplier effect out of that knowledge. The capacity to work together for a common purpose.

These two subcomponents of Social have been used and applied by the European Union to evaluate development proposals for more than ten years already.

b. Physical

- Natural Environment: The natural assets that require not only to be protected but also to be enhanced and augmented by compensatory and investment policies.
- Built Environment: the Urban or interurban capital is a physical asset that has to be adequately invested and maintained. It is as well a Cultural asset that feeds the Social Capital subcomponent increasing the strength and resilience of a society.

c. Governance

- Public Administration: The most obviously relevant aspect of Governance is Government: Public Administration. As the Dichotomy between Social equity and economic efficiency cannot be technically solved and only equilibrium might be reached through political decisions.
- Social Institutions: Social institutions are essential to complement government policies and to control, if necessary government doings. They are essential for a strong and dialoguing society, but have to be equilibrated to avoid the weight of any in lobbying the Government in policies that do not pursue the General Interest.

d. Economic

- Capitalization: There might be numerous ways of analyzing the basic components of an economic system.
- Consumption: Running costs both for a firm or for a population (consumption) is essential as it reduces the investment accumulation and thus the development speed.

2. The 'developing' actual context

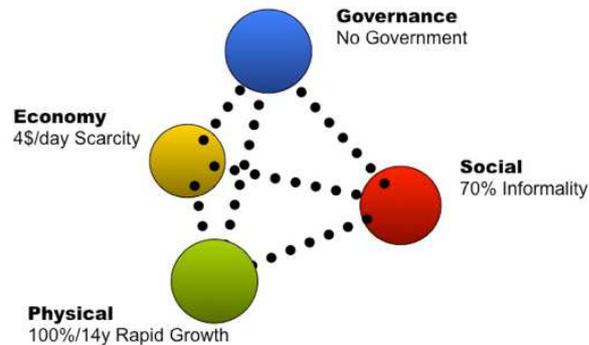


Figure 3: Tripod Development Paradigm. *Developing Challenge*

We have analyzed the paradigm of development for developed societies. Developed planning systems do have full-fledged instruments to act on these components and achieve (or approximate) the desired objectives: Economic efficiency, Social equity, and Physical sustainability in a framework of a Governance policy for equilibrium.

Such is not the case in developing societies. In developing societies the context is different:

- Social: The context of the Social structure is mainly informality: Sometimes as much as 70% or 80%
- Economic: The context of Economic activity is scarcity both in the private but mainly in the public sector: Municipal budgets for infrastructures investments might be 60 times smaller in medium income economies and 3.600 times smaller in low income economies (1 day investment equivalent to 10 years)
- Physical: The context of Physical challenge is an explosive growth with no respect to natural assets: Often they are under pressure of an annual 5% growth. That means 100% every 14 years. Twofold growth every 14 years
- Government is more of a formal figure with little capacity (or willingness) to implement policies that will improve the situation if it is not their own situation: You can Plan and manage when Government is deficient (as we might agree for many developed societies), but it is rather difficult when the Government is practically inexistent and mostly works for its perpetuation rather than to service the population is meant to.

What should be done

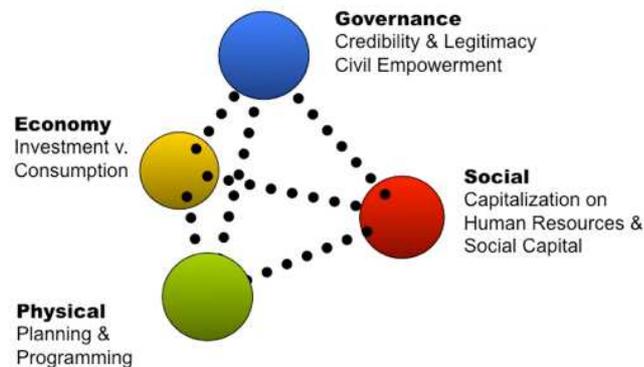


Figure 4: Tripod Development Paradigm. *What should be done*

The objectives of a policy for development should be bridging the gap between the actual situation and the development paradigm. En terms of each component that is:

- a. In Economic policies: To control the share of investment and consumption. To increase at most the proportion fixed capital investment as a base to promote and sustain a competitive economy. Sometimes in low-income countries the level of sacrifice required to achieve a fair share between investment and consumption might not be acceptable.
- b. In Social polices: Investing in human resources. Providing the population with knowledge needed for development on specific strategic sectors with country's economic future in view. Foster a system of social values based on attitudes of work ethics, collaboration, fair behavior, win-win approach, respect, dialogue, etc.: the set of values that make possible developed societies to be efficient against societies of opportunism, abuse and privileges. To move from societies were cheating is praised to societies were retribution for efforts admired values of societies with strong social capital. Values of 'to Do' and not 'to Be'; meritocracy instead of clienteles; deserved benefits instead of inherited privileges.
- c. In Physical policies: A clear definition by plans and programs of protection and enhancement of natural assets. A definition of urban public spatial components, with a set of regulations controlling negative externalities from the private sector and fostering positive ones. Defining components of a sustainable urban environment and instruments capable to enforce them.

- d. In Governance: To build up an Administration based in credibility (achievements corresponding to promises) and legitimacy (objectives according to ethics and procedures according to law). An administration that fosters and collaborates with semi-public Social Institutions. Achieving involvement and participation of the private sector in institutions that will collaborate with the administration in the definition of policies and the joint effort of implementing them. At the same time institutions that will be elements of stability and social resilience when confronted with and administration that needs to be addressed and possibly reminded it is departing from correct policies. A strong social institutional network with social participation and public involvement is the best guarantee for a long lasting stable and strategic vision.

3. Why it cannot be done

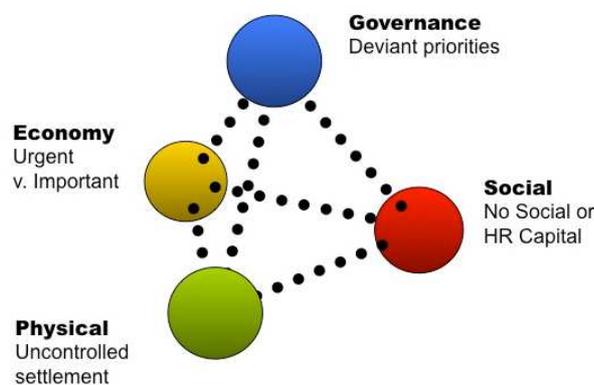


Figure 5: Tripod Development Paradigm. *Why cannot be done*

These objectives however are not possible to achieve in the actual circumstances. That was what should be done. But it will not be done, because:

- Economic policies are not based in a long-term vision of capitalization of the urban structures.
- Human resources take a long time to grow and accumulate. Education is costly. Results are seen in timespans longer than the expectancy life of the politician that has to take the decision and commit his budget to it.

Social capital is even more difficult to build. Society values are resilient and have long inertia. Often entangled with local culture and social patterns that are identified as cultural values. Not only there is a natural inertia and resistance to improvement, there is as well an ideological excuse to resist. (i.e.: Gender)

- Physical models require a consensus (Pattern) and an explicit proposal (Plan) that everyone formally or informally follows and implements. The Administration is unable to implement and make effective anything on a context with 70% informal sector. On top of that cultural patterns have been destroyed by an unresolved hybridization between the modern and the traditional cultures. Processes seem to be following the worst of both worlds.
- Administration-Governance is an empty shell. Posts are filled with people with social merits (tribal network) but no managerial capacity. Many Administrations are residual

colonial structures where jobs are filled up as political or social reward. No specific performance required. Public budget is either meager as there is no fiscal base to build a taxing system. Sometimes though it becomes substantial when fed by the income from extracting industries (Oil, Gas, Minerals, etc.). When meager it provides just for the self-sustainment of the Administration salaries and expenses with no effect on real world or civil society. When fed by extractive incomes it is used to secure electoral loyalty, often ethnically related, in unstable tribal compromises. No fixed capital (i.e.: infrastructures) accumulation is achieved; just income is spread around for consumption.

- If the country has relevant resources the economic groups and multinational firms that benefit from these resources will take active part in ensuring that the flow resources goes on.
- If the country has no relevant resources the multilateral agencies will intervene only when violence explodes and can affect donors domestic politics.

4. What could be done

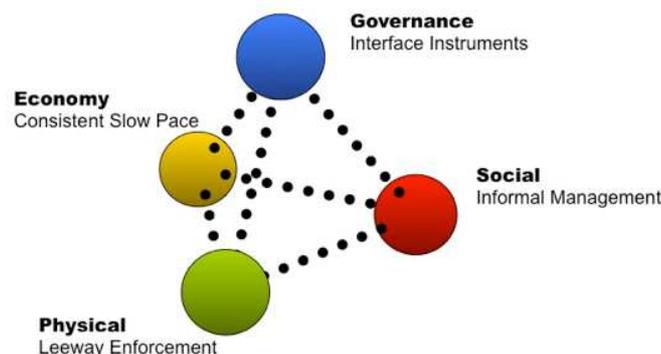


Figure 6: Tripod Development Paradigm. *What could be done*

What can be done has to be adapted to the very limited scope of action the circumstances allow. It has to be achieved with a long-term vision, but with a short-term attitude of patience: in the mood of the waiting for improvement of conditions rather than a mood of purposeful policy implementation to produce development. A policy avoiding bottle-necks that will definitively prevent development rather than a full fledge policy that will attain the forecasted development in a time frame as a result of adequate policies. **Preventive rather than proactive.**

Action policies might focus in four adaptation of the Development Paradigm:

- Incrementalist investment approach,
 - Adequate intermediate action scale,
 - Time-preventive policies, and
 - Social interface mechanisms.
- a. Urban fixed **Capital investment** is not possible. The public capital to make investments in indivisible public goods is just not there. The private capital for divisible goods lacks potential demand to respond to those services. (i.e.: Transport) In best of cases some

flow of public capital can be detected. Should rather be described as 'dripping' than 'flow'. Dripping can be directed to priorities, but the dichotomy among economic and social priorities is difficult and painful to resolve. Investment efforts are very difficult to prioritize when subsistence levels require social **consumption** to avoid, non-metaphorical, death. We can only wait. Wait for conditions to change. Meanwhile keep public spaces consistent and prepared to house those investments whenever they will occur in the future. When the dripping occurs the approach should incorporate an incrementalist method. Benchmark models should not be applied. If generalized the capital will be unreliable and the project will remain incomplete and ineffective. If specific they will not be replicated and will remain exogenous to the system. The approach has to be incrementalist. In a domestic analogy, instead of aiming for 'indoor closets', ideal and unattainable, the approach has to be '**hangers in the wall**' with an accumulative mechanism.

- b. **Social** Informality is the norm. We have to learn to interact with it. Impossible to 'control' from the formal sector (Administration). That might be for the best if we account for the proceedings and performance of the Administration.

Informality is an asset. It is 70% of economy activity, urban development or social governance. No country can underuse 70% of its assets for development; **we will have to learn how to interact with it for the best of both worlds.** Formal and informal are oil and water. Formal structures cannot accept informal ones as they put at risk the formal structure reducing its credibility for implementation and reducing its legitimacy. The Police-Justice system cannot accept petty crime, even if it cannot control it, because it will delegitimize the rest of its proceedings. Interaction takes place in denied obscure proceedings.

Interface has to be resolved in a more efficient way that will understand the needs of the informal sector and requirements of the formal one. Civil Society Institutions can be the interface. NGO's are a good example. They can relate formally to the Administration, they can adapt to the informal sector. NGO's are often seen as enemies by the Governance formal sector, the Administration, as they reach and succeed where the Administration doesn't. The administrators and managers of the formal sector see NGO's as proof of their own inability. They often antagonize, as the NGO's become platforms of expression of the unresolved needs of the informal sector by the formal one. The formal sector, the Administration, should understand that it is within the DNA of the formal sector system the incapacity to address informal sector. They should understand that the NGO's are instruments at their service to improve their performance. Final distribution of utilities and goods (water, electricity, sewage, waste, etc) can be managed by these interface mechanisms between the formal and informal sectors. Police knows very well how to deal with informal Governance mechanisms to keep the petty crime at bay, in the knowledge that it cannot be eradicated. Similar example can be shown for the Economic, Social and Physical sector as the one used for Governance.

We have given the NGO's example. It is not the sole one. In Nigeria it is traditional tribal patterns of social interaction (Kings, chiefs and tribal settings) that semi-formally interact (legally accepted and accounted for) with the formal democratic institutions. Research in these field exploring alternatives as to be undertaken.

- c. **Physical:** Administration has little capacity for implementation of any proactive urban-physical policy: No budget, no governance, and no instruments. The attitude can only be the one of minimizing damages rather than maximizing unachievable benefits. In absence of infrastructures we can only wait for them. And in the waiting prepare the space to hose them when they will be possible to build. **We can define the basic urban structure and prevent the encroaching of the public spaces required for a full development by protecting leeway.** If the urban structure is right, the infrastructures and urban services will come sooner or later and they will be adequately laid out. It the

urban structure is not in place the development will have a slum pattern and the cost of upgrading it will be threefold in the future. If the definition of public space is complemented with some sort of private lot pattern the result will be optimum. But even though this proves impossible plot standardization in the future will come, with time and effort, as a requirement of the private sector for its own economic improvement. Building regulations will be impossible to implement. No attempt should be made, as it would be effort consuming with inappreciable results. The time will come for substitution of the informal construction and the regulations will then be enforceable. Time to be measured in decades, or even centuries, but cities are there to stay, as slums would, if we are unable to prevent them. **Public space definition and protection becomes the main focus of what can be done.** Requires definition and divulgation by simple standards and policing with simple mechanisms. It is within the scope of the limited Administration capacities.

- d. **Governance provision: Scale** of interaction is mostly **1:500**. Large scales have to be formal. You cannot build up a national or metropolitan energy network in an informal way. You cannot build informal train services or informal highways systems. It has to be formal. The **1:500.000** or **50.000** scales are formal. **The informal is small scale.** It is the single individual or the small community that act informally. Accumulation of those small units can have enormous effects but the grain of performance remains small. The scale of the informal is 1:50. The household. We have the urban (**1:5.000**) or the neighbor (**1:500**) scales for the formal/informal interaction. The development objective should be to formalize the urban scale as much as possible. **To structure the urban informal expansion patterns into an upper grade biological system.** Provide elements, features and structures of upper grade biological systems to that primitive and resilient expansion. **The interface between the formal and informal should then take place at the neighborhood scale, 1:500.** The neighborhood community either using traditional management patterns like traditional tribe structures in Nigeria or interface instruments like NGO's in many places. Both can produce the interface dialogue between the upper formal scales and the informal one.

5. The *post-optimal city* Era. A methodology to describe and interpret the territorial basic matrix: reaching the rules of the informal settlement

According with Manal El-Batran and Christian Arandel "Among the most visible manifestations of the challenges posed by rapid urbanization are the informal settlements on the periphery and the first of these paradoxes is explained by the fact that vacant formal housing units are not affordable to most urban dwellers. The second is explained by the efficiency of the informal housing sector: those owning or developing private agricultural land have been better able to respond to market demand than the government authorities which controlled the desert land".

We are speaking about a **city that is beyond the optimistic idea of an "optimal city": formal and informal/illegal settlement of the city, as the shadow for Peter Pan, have to be considered to work together: we have to understand the slum economy and its linkages with the spatial issues;** so, the possible integration, from the spatial point of view, of the two parts of the same city. **Both the affordances of the formal and informal settlement have to be considerate as fundamental for the metropolitan scale operation,** that is:

*production of space

*situated practices

*everyday life

*time

*communication / networking

From the Pedro Ortiz point of view the urban (1:5.000) or the neighbor (1:500) scales are the dimensions for the formal/informal interaction, and indeed the development objective should be to formalize the urban scale as much as possible. So the Urban Design and Architectural fault is to structure the informal expansion patterns into an upper grade biological system, and in particular to provide elements, features and structures of upper grade biological systems to that primitive and resilient illegal expansion.

For that, our project is dealing mostly with the interface between the formal and informal matter that should then take place at the neighborhood scale, 1:500. For the project of the city related to the development paradigm outlined by Pedro Ortiz, there is a problem of governance and economic, but also the question deals with the location and the shape of the new settlements with respect to the role that they have to fulfill within the metropolitan body.

The object of our study concerns the way of the mutual adaptation of the formal and informal spatial and practices **to give shape to the area of contact or buffer zone that determines an architecture of boundary objects**. That paper wants to report a methodological approach to describe and interpret the territorial basic matrix, to shape a conceptual/physical terminology specified by definitions for reaching the rules of the informal settlement. All that, to be able to upgrading and to blend it with the formal one.

From the point of view of architectural and urban design, in order to deal with the theme of what does it means the “right development paradigm for the integration of the formal and informal settlements in the metropolitan cities”, we must consider three basic elements: the time, the scales of intervention and the models.

a. The Time

The right development paradigm is the one in which the development is feasible in the short and long term, and in which, therefore, the development between the two times is compatible, without having to delete one of these.

b. The Urban Scales

They are mainly two, the one related to a metropolitan scale model and the one that connotes a model of urban scale.

c. The Models

There are two models: a model of sustainability, which determines the indexes of quality to be respected, and a model of metropolitan city (Ortiz), which determines the rules for the possible presence of new metropolitan quantities.

The Issues

From these three basic data the issues we face are diverse and include:

- * the time which is peculiar to each model of development
- * the size that is optimal for each model of development
- * the sustenance of the residents and local economies
- * the local elements which in the transformation NOT to break not to destroy a sustainability that they have attained in any case
- * the local elements which in the transformation must be strengthened so that the inhabitants can participate and share their growth movement

- * the places of interchange and of densification within which to introduce the development

The Aim

The main objectives that we set deal with the possibility to explore an evolution of the local model of urbanity, but also, where it's possible, the opportunity for a growth of the local model through a transformation that we can define possible because it's realistic to consider that for the regional and local models.

The tools

The description and the interpretation of the new phenomena of metropolitan urbanization need the setting of a new mapping-project: that is going to be an hybrid mapping, a new mechanism of *re-territorialization* and care of the land, which can determine the processes of an identity formation. The projects carried out in the Laboratory of Measure and Scale of the Contemporary City of the Politecnico di Milano come from the study of the geography (geographic point of support, Febvre), interpreted as a layer of the earth that determines the characters able to structure the process of regionalization along history (psychological landscape of art / urban biography, Focillon): hence, the changes of territorial hierarchies, the structure of poles and networks, which are considered as the basis for the contemporary patterns of landscape (land + landscape).

These are transmitted to people through maps, which today are more properly hypertexts and are routed through the new technologies; we interpret them as deposits of information. In order to realize them, we use some methods of representation that are based on processes of narration and deal with topics like the testimony, history, data, diagrams, traditional or interactive maps. These may also be processed by users, which can increase, by themselves, the power of data. **These maps show a *landscape DATA*** (Bottazzi).

For the project, then, thanks to specific computational tools, it's possible to build a series of topological models, which describe and connect the main mechanisms able to generate the built space, by simulating the changing-reality from which it is possible to obtain, through a critical reading of the pre-configured scenarios, both previsions and models of sustainable development, which are strongly linked to the specific physical and cultural context.

The Premises

According to Chiara Brambilla, although places are often seen as physically and temporally stable data - in this way giving the time a spatial fixity - their meanings are continuously constructed, de-constructed and re-constructed in the present. Places, therefore, are not only constantly interpreted, but are also inhabited by both structures of meaning that belong to the past, and by physical presences that are linked to different times and origins. Because of that, according to Durand Lasserre: "Despite numerous initiatives during the last decade in sub-Saharan Africa to set up new land information systems or to modernize existing ones, have been limited results achieved." It is essential to understand the regimes of local properties as well as the logic of the regularities of relations, in order to define which is the model of the market, accessibility and of institutions, and, finally, understand the rules that different colonization processes have carried and determined over a territory.

As a result, the analysis able to localize the two models should be "functional" for two different types of reality:

- * the existing reality, which would not stand the changes set by the time
- * the reality of metropolitan growth, which has to be precisely located

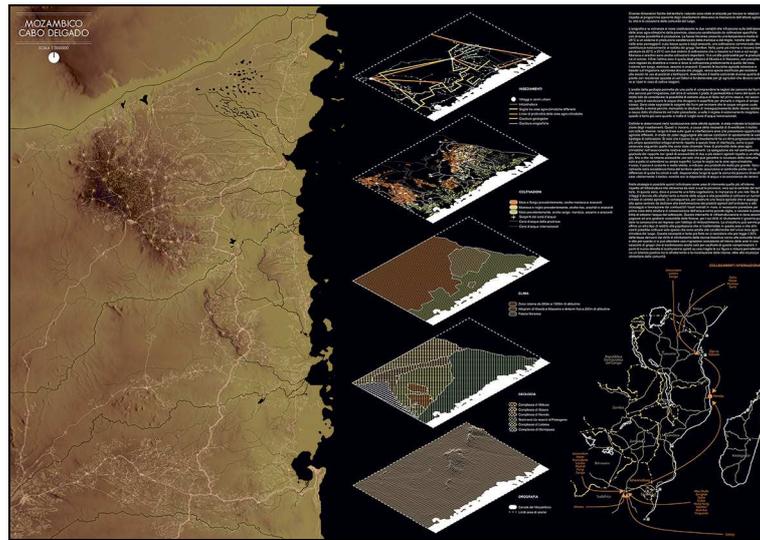


Figure 7: Mozambique. Orography, landscape, land use (Bovio, Musetta, Zammataro)

The Experimental Project

The sustainable design for an Urban Region finally will answer the questions of new metropolitan functions:

- _ Tourism (the desire to find again time dimensions of the past which are inconsistent today)
- _ Industry
- _ Agriculture

These will push into new migrations both the rural citizens and the ones coming from small and medium-sized cities, who will tend to settle down following the typical settlement-principles of their original cultures.

6. An hypothesis for the reading and the interpretation of the African sub-Saharan settlements

The projects that we have realized insist in areas both of transition between formal and informal and between informal settlements and countryside. The goal related to the proposed settlement-principle, is to generate between the two cities, both legal and illegal, a spread molecular system of services: in other words, to build a reinforcement of welfare through the construction of a demand (which is a cultural action) able to solicit a widespread offer of services for the citizen, signalized by a strong image of the institution and the public space. The administration who owns a Vision, must, to one side, accept (negotiate, be complicit with?) a temporary illegality which is able to provide collective services to citizens, but, on the other side, always, and firmly, reject an illegality exclusively for private purposes.

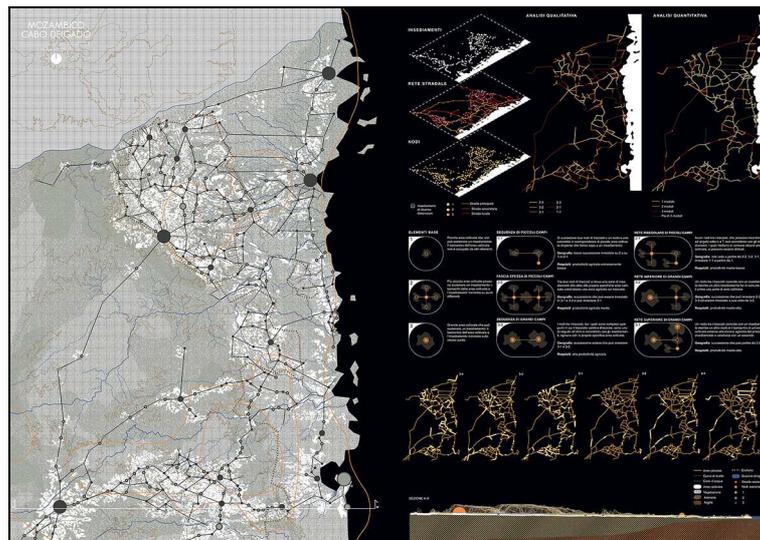


Figure 8: Mozambique. Settlements – villages/fields – parametric studies (Zammataro)

The Method

In order to design inside the “informal” tissue of sub-Saharan countries and, as a consequence, to develop services within its perimeter and, especially, in the buffer areas close to the legal city, we are experimenting a method of analysis, which is taking inspiration from the work of some Italian authors who codified the method for performing operations of morpho-typological interpretations; these are firstly the result of a “spontaneous consciousness” within a population, and later allow the construction of a typical figure of the territory through a robust and resilient image.

The first step deals with the identification of the primary territorial type -defined as “concept of territory” by Caniggia-, which every human-being, according to a specific Place and Time, assumes. This is a concept related to a consciousness of the territory, which is spontaneous and framed by:

- 1) a way to cross the territory
- 2) a way to choose the place for settle down
- 3) a way to locate the production activities
- 4) a way to locate a node-system, suitable for setting a trade/exchange area: the relation and meeting area

The importance of this issue is evident, yet is a concept that includes a dimensional entity (amount of territory) where the human-being carries his life, no matter the historical period. The primary Territorial Type is determined by the relations between the *podere (fundus)* and the pasture, so it is not exclusively related to a set of relations, but rather invests intersomatic relations between human-being and environment.

The concept of the robust-Image is directly connected to the act of seeing, which is typically something related to the Landscape, here interpreted -from his Latin meaning- as a Total-built-Landscape/Total-Landscape-made-Visible. In this case, Caniggia finds essential the

presence of a *Promontory*, i.e. a high point where is possible to look at the new physical territorial dimension of the Primary Territorial Type after its leap in scale. As a consequence, only if we look at it in its totality we could understand landscape through a mental image – originated therefore from consciousness-, and only after this it's later possible to conceptualize and design it. When both the territory and the relations we'll be grown, we'll then need a *Promontory of the Promontories*, urgency of territory, from which be able to understand in a unity the bunch of relations between the *podere (fundus)* and the pasture. This is a trade/exchange area, where the local characters, languages and behavioral codes meet the global ones, where the primary Type faces a leap in scale. There's no need to underline the importance of these "hinge points", above all if we consider their possible value within informal settlements, which are generally considered self-reflected and not-opened to external influences. The exchange process should indeed be coming from both directions, from informal to formal and vice versa: it's therefore important to set up the reasons why that should happen.

Because of the fact that the act of settle down in the Valley (*Geddes*, 1919) is for the human-being constant in time, according to the morpho-typological theory we can say that starting from the idea of Territory-Matrix (primary Territorial Type), we come then to the concept of typological process of the territory: human-being's experience within it dilates itself till understanding the consciousness of a system of sizes, which perform as metropolitan and invest the so-called agriculture-urban area. By dealing with this idea of territory, which is elastic and not-stable, but part of a process, we are then able to identify a "cultural area", which includes all the ways the historical overlapping of events conceptualized, identified and designed the territory, above all the trade/exchange area (psychological places of the art – Focillon).

According to the classic morpho-typological studies, the interpretation of the territorial typological process is possible through a system of signs, tangible clues, which are related to a concept of Territory and show its structural changes in case of a leap in its scale. These signs are necessary for getting to this "morphological crash", they appear complementary and inclusive of the previous ones, and are all values left by past generations and obviously link to each other, from different scales. These may be signs related to both essential or marginal structures.

A so-called mature-Territory appears organized into scalar sizes. Even informal areas (Ard al Aliwa in Cairo or Istanbul Gecekonu, for example) may already be characterized by a cycle of consolidation (from temporary homes, to medium-rise-buildings, up to towers), which is full of artificiality and consequent artificiality (as Caniggia was forecasting) due to rapid land/settlement-changes, like in the case of artificial structures that are designed against the territory and therefore difficult to be assimilated by it. The recent phenomenon of climate change accelerates and multiplies the risks associated with these uncontrolled structures. If a renovation cycle from consolidation isn't yet the condition of the informal areas that we are here discussing (in particular the case studied in Dar es Salaam in Tanzania), it is quite certain that this territory will face a crisis of adjustment, which, according to Caniggia, often drives to a phenomenon of neo-Middle Ages or *Favelism*. This later implies that the city could structure itself only from small scale procedures, blocked into minimum existence-values

The Procedure

According to Massimo Della Rosa, in order to describe the basic territorial matrix, which determines the typical figure of the territory through figurative landscape unities, it's fundamental to map all the main topographical elements of the territory; these constitute the fundamental tenets under which determine the coordinates of the relations between the *podere (fundus)* and the pasture. These basic element, in fact, have been matched into a matrix able to describe the Scenarios of the figurative landscape unities, which compose the different Sets / Tones of the Landscape. (Fig. 9)

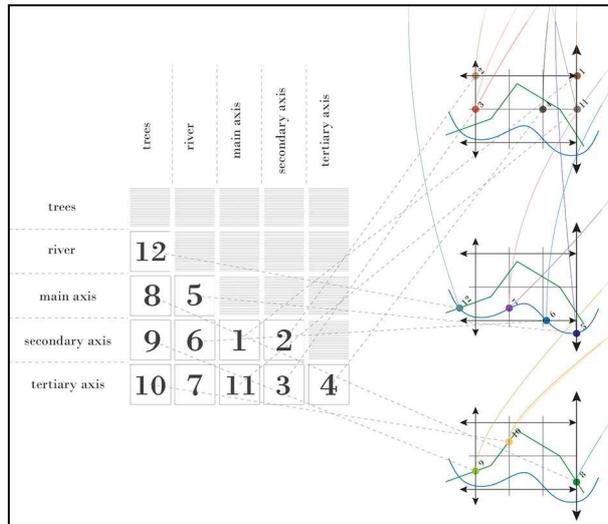


Figure 9: *Territorial Matrix*

The following step deals with the identification of the real, physical position -on the territory- of the previous elements (Fig. 10), so as to determine their anthropological meaning through their symbolic, or not, use-value.

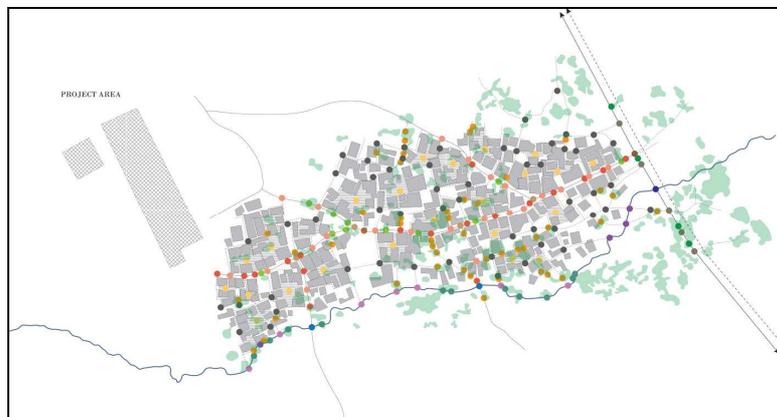


Figure 10: *Dar es Salaam, Tanzania: identification of the position of the topographical elements*

It's possible then (Fig. 11) to start with the analysis of the complexity produced by the leap in scale, determined by the transition from the relation between residential unity and its closest context, to the settlement to the environment, which brings to an upgrading of the anthropological meaning of the elementary Signs.

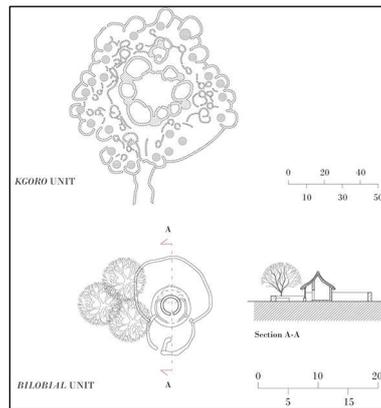


Figure 11: Molokwane, plan of house-type and settlement

The study of the elementary structure of the settlement, both of its image and its use, allows to clarify the conscious-process that determines a self-composition of the essential and complementary signs, which, in every scale reached by a settlement, define the use of a territory by a population (Fig. 12). It's thus possible to understand the quality of relations between the different elements; in fact, through the analysis of the hierarchies between the signs: structural, linked to the driving-areas and therefore consistent and durable, essential and complementary or marginal and fragile, we can identify the elements that set the weak images of the settlements, characterized by inconsistent dimensions that cannot survive the leap in scale.

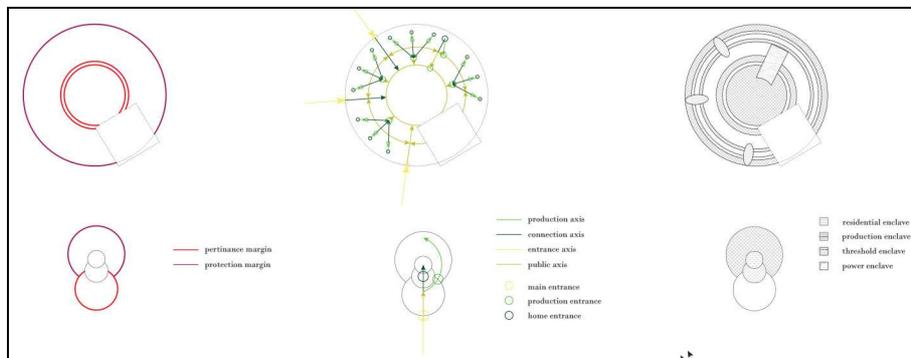


Figure 12: analysis of the use of the territory by local population

The settlement is then analyzed (Fig. 13) as:

- 1) quality of the perimeter (*finitio*)
- 2) internal relations: itinerary relations, spatial relations, land uses
- 3) enclave

Which are later specified as:

- 1) protection margin
pertinance margins
- 2) entrance axis
public axis
connection axis
production axis

The composition of these elements determines later the different areas of the settlement:

- 3) threshold enclave (limited entrance area, useful as protection spot of the settlement)
power enclave (area of the *Parade*)
residential enclave
production enclave (generally located in the central area of the settlement: *Central Cattle Pattern* type)

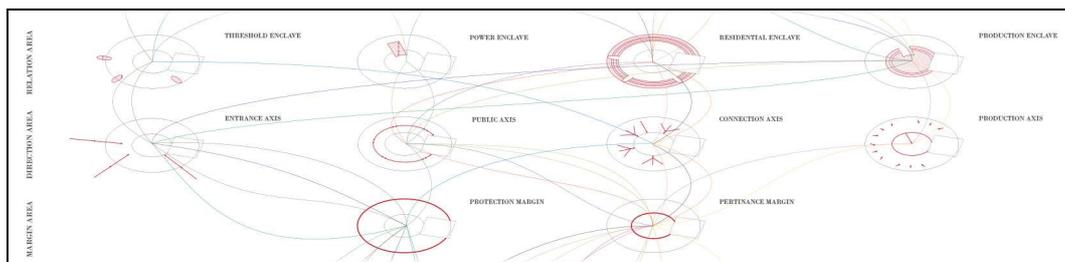


Figure 13: *structural signs that rule both the house-type and the settlement*

Each settlement, as the scale changes, modifies its range of influence towards the territory, that can be interpreted as an elastic entity (Fig. 14) and it's determined by:

- 1) a dynamic: it describes the way of crossing the land
- 2) a tonality: it's the meaningful feature of the act of living.
- 3) a frequency: it's the time-unit according to which an event occurs periodically; the described phenomena it's characterized by the same factors. The study of the frequency allows to identify the recurrent distances/measures between the axis of penetration, according to a typical rural settlement-type, which has a radius of 800m

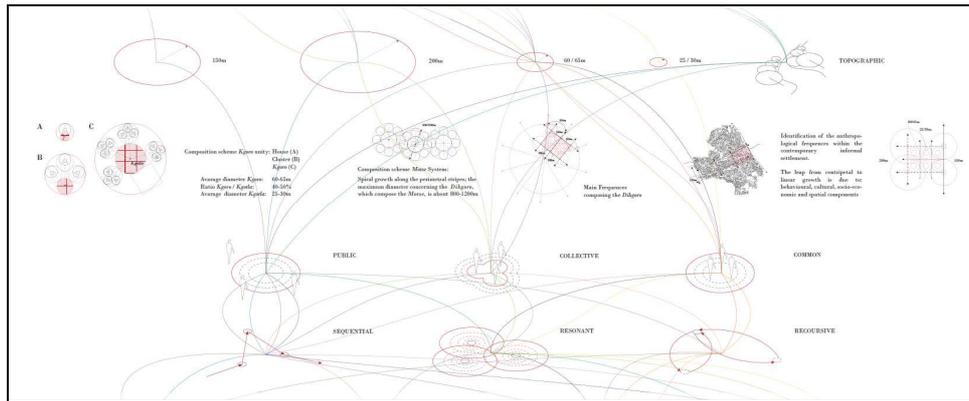


Figure 14: range of influences within the territory

Inside the new dimensional definition of the territory we should then determine the trade/exchange nodes (*Promontory of the Promontories*), which specify the areas of leap in scale where the different scales are simultaneous and include each other. According to Caniggia, this step is much more than dilate the metric dimension of the studied structures, as it implies also the simultaneous expansion of the qualities of the relations among the different observed objects. Each dimensional scale, asserts Caniggia, becomes a moment of understanding which is increased in scale; yet is possible to describe each scale through the identification of a singular point (the trade/exchange node), due to the fact that they are part of a continuous process of scale expansion, this moment, which is represented by the point itself, becomes an important phase of evolution of the informal settlement (Fig.15).



Figure 15: identification of the points

Conclusions

Within the context of rapid growing urban areas, one of the main phenomena turns out to be Informality, as a result of the processes of transmigration that produce a peripheral urbanization often solved without continuity with the existing fabric.

As a direct consequence, we assist to the birth of a line of discontinuity (threshold that brings a leap in scale), which separates the system of Palimpsest (urban center) from the one of Hypertext (periphery), physically bordering but not resonant.

The suburbs may then turn into urban belts of imbalance, places of informality, in which there's a lack of strategic planning useful for enriching of basic services and infrastructure the new urban spatiality. In many cases, in such areas, illegality transforms the area into a

loser and dried system, characterized by a need of profit -often alien to law- based on a pure exploitation of the environment.

The phenomenon of Informality appears therefore as a consequence of human/economical migration flows -from rural to the urban contexts-, something difficult to stop but in need of control.

Besides practical necessities, there's also a need to understand what informality is also in terms of its structural-features and rules, in order to operate in it respecting the Image of the Settlement, as a tool to contribute to the recognition of the environment and, as a consequence, to the resilience of the system.

Recommendation for planners particularly in regard to migration and its impact on informality

Metropolitan issues, as the ones we have addressed in this research, are of a new kind. The dimension, the scale, they have to be addressed are of a nature that never before the professionals and scholars have dealt with. It requires new disciplines and new approaches to confront them. Normal urban analysis, research or planning cannot address the issues. The structure and nature are different, either in economic, social, environmental or institutional terms. The metropolitan phenomena in Institutional terms does not involve, as in urban, mostly a single local authority (the municipality). It involves a multitude of municipalities and agencies. The process of governance is thus of a different nature. In Economic terms that large metropolies have for the first time a global network of economic relations and a productive capacity that overruns most of the time the majority of sovereign states with international recognition. In Environmental terms the footprint is unprecedented if compared with the urban impact and has to deal with completely different legal and technical tools. The dimension of inequity, persistent thought-out historical evolution, might find in size a new dimension.

All those elements make metropolitan issues a new phenomenon, which requires a new discipline, probably a new academic field of research away from traditional urbanism approaches and methodologies. This is what this paper pursues. In such way, from traditional urban values and attitudes as prevention of migration and formalizing of the informal sector, this paper presents an approach of accepting migration and metropolitan growths a phenomenon that is here to stay, and we have to deal with instead of turning a blind eye of denial. From turning a blind eye as well to an informal sector that is often 80% of the economy, sociology, institutional or urban components of those societies and as such most of its assets, to an attitude of collaboration and complementarity trying to find the ways to produce that dialogue. Formal/Informal interface research for a dialogue that has to be produced between very different procedural frameworks incompatible in principle. Interface in Physical-Environmental terms between the larger scales of national or metropolitan dimensions and the smaller ones of urban, local and domestic. Interface in Governance between the formalized institutions and the informality of local social networks.

This is the line of work this paper wants to follow/initiate and invites other professionals and scholars to pursue.

References

- Alberti L.B., (1565) Dell'Architettura, Venezia, Appresso Francesco de Franceschi, Senese
- Bottazzi R. (2012), Lecture into the Politecnico di Milano Phd Course: Innovative technologies in architectural and urban mapping. Built space and mental space, acts proceeding
- Brambilla C., (2011) Geografie della memoria herero: "costellazioni" spazio-temporali nella Namibia post- coloniale, Università degli Studi di Bergamo
- Caniggia G., Maffei G., (1979 / 2008), Lettura dell'edilizia di base, Firenze Alinea
- Cobbett W., Speech held at the International Symposium on Exchanging Global and Egyptian Experiences in Dealing with Informal Areas within the Wider Urban Management Context in Cairo, October 2008
- Contin A., Ortiz P., (2012) Dar Smart the city territory. Towards a new dimension, Aesop 2012 conference.
- Contin A., Sbacchi M., (2007) Canicattì, Campagne abitate. Paesaggi d'arte, Firenze, Alinea Editore
- de Cauter L., (2004) The capsular civilization: on the city in the age of fear, Rotterdam, NAI Pub.
- de Certau M., (1984) The practice of everyday life, LTD London, University of California press
- Della Rosa M., Master Thesis by Politecnico di Milano, Scuola di Architettura e Società.
- de Michelis M., (1990), La rivoluzione verde. Leberecht Migge e la riforma del giardino nella Germania modernista, in M. Mosser, G. Teyssot, L'architettura dei giardini d'Occidente, Milano Electa.
- Durand Lasserre: (1997), Uganda, Namibia, Ghana case studies, in Augustinus C. (2003), Comparative analysis of land administration systems: African review .With special reference to Mozambique, Uganda, Namibia, Ghana, South Africa. Work undertaken for the World Bank, funded by dfid
- El-Batran M. and Arandel C., (1998) A shelter of their own: informal settlement expansion in Greater Cairo and government responses, in Environment and Urbanization, Vol. 10, No. 1, April
- Febvre L., (1980) La terra e l'evoluzione umana : introduzione geografica alla storia, prefazione di Franco Farinelli. Torino, Einaudi
- Focillon H., (2002) La vita delle forme seguito dall'elogio della mano, Torino, Piccola Biblioteca Einaudi
- Fucella R., (1973) Forma e struttura della città moderna, Napoli, Giannini Editore
- Huffman T.N., (2001), The Central Cattle Pattern and interpreting the past, *in* Southern African Humanities, Vol.13.
- Huffman T.N., (2010), Prehistory: Pre colonial farmers in Gauteng (2010), (Online) available at: <http://www.sahistory.org.za/topic/prehistory-pre-colonial-farmers-gauteng?page=1>, (visited on January 2013)

Latour B., (2011), *Networks, Societies, Spheres: Reflections of an Actor-Network Theorist*, International Journal of Communication 5 (796–810)

Lefebvre H., (1991) *The production of space*, London, Wiley

Lynch K., (1972) *What time is this place*, Mit Press, Cambridge, USA

Lynch K., (1964) *Immagine della città*, Padova, Marsilio

Morin E. (1988), *Il pensiero ecologico*, Firenze Hopefulmonster.

Mukhopadhyay P., Centre for Policy Research-Delhi, (2012) *Untenable and Unproductive? Seeking 'Truth' from 'Facts' on Informal Settlements in India*, in *Acts of the International Conference: Governing the metropolis : Powers and Territories. New Directions for Research*, <http://governingthemetropolis.wordpress.com/le-deroule/sessions/sessionsprogram/>

Ortiz Castano P., (2013) *The Art of Shaping the Metropolis*, Mc Grow Hill, NY on proceedings

Piccinato L., (1934) *Il significato urbanistico di Sabaudia*, in "Urbanistica", n. 1, Gennaio 1934.

Rogers, E. N., (1997) *Le preesistenze ambientali e i temi pratici contemporanei*, in *Esperienza dell'Architettura*, a cura di Molinari, L., Milano, Skira

Shane G., (2005) *Recombinant Urbanism*, London, John Wiley

Steyn G., (2012) *Ideological and topological parallels in pre-colonial Tswana and Swahili Architecture*, (Online) available at: <http://www.inter-disciplinary.net/critical-issues/wp-content/uploads/2012/07/steynspaper.pdf>, (visited on January 2013)

Steyn G., (2011) *The Spatial Patterns of Tswana stone-walled towns in perspective*, (Online) available at:

[http://repository.up.ac.za/bitstream/handle/2263/20072/Steyn_Spatial\(2011\).pdf?sequence=1](http://repository.up.ac.za/bitstream/handle/2263/20072/Steyn_Spatial(2011).pdf?sequence=1), (visited on December 2012)

Social integration outcomes of university students under urbanization in the Wa Municipality, Ghana.

Emmanuel K. DERBILE*

Department of Planning and Management, Faculty of Planning and Land Management,
University for Development Studies, P.O.Box UPW 3, Wa Campus, Wa UWR, Ghana

E-mail of corresponding author: derbile_uds@hotmail.com; ekderbile@hotmail.com

Cell: 244516896

Abstract

In the context of social integration theory, the issue this paper explores is the social outcomes arising from the interactions between university students and indigenous Waala communities and families in the municipality, north-western Ghana. Drawing primarily on results from qualitative methods of data collection and data, this paper underscores that social integration outcomes have been both positive and negative, the latter being predominant. In the positive domain, majority of university students from varied ethnic backgrounds are socially accepted to live in shared rental accommodation compounds by indigenous Waala families and by extension allow for modest cross-cultural learning's and exchanges. University students, especially female students serve as role models of education to Waala youth, particularly, young girls – inspiring them to attain higher education. In the negative domain, these include conflict between students and Waala families over varied ways of life, conflicts over rents and ejection of students from rental apartments, differential application of rent rates and exploitation of students, differential application of market prices on tradable goods and exploitation of students, and finally, rising incidences of love relationships between students and indigenes leading to social tensions and undesirable social outcomes. The paper underscores that there has not been true integration of students into the Waala community because integration has been partial and underpinned by much more differentiated ways of lives, culture and conflicts than the communalities in social values necessary for binding what has become a secular municipality. Thus, the paper advocates an integrated approach to District Development Planning (DDP) through multi-stakeholder engagement for the promotion of education, platforms for dialogue, and strengthening institutions for dealing with emerging issues and conflicts arising from social integration.

Key words: urbanization, social integration, university students, outcomes, Ghana.

1. Introduction

This paper analyses the outcomes of the social integration of students of the University for Development Studies (UDS) at Wa into Waala communities and families in the Wa Municipality. Over the past decade, the Wa municipality has experienced an unprecedented rate of urbanization, partly attributed to the influx of a temporary university student population of the University for Development Studies (UDS). Most of these students are accommodated in shared private residential accommodation commonly referred to as compound houses in the city and its suburbs. This has brought students close to the indigenous people, the Waala, leading to close social and economic interactions between the two groups.

This paper therefore draws on social integration theory for analysing the outcomes of the interactions between university students on the one hand and indigenous Waala communities and families on the other hand.

In this respect, the paper is organized in five sections, the first being this introductory section. The next section is devoted to an overview of urbanization and the study methodology. In section three, the results and outcomes of social integration are presented. This is followed by a discussion and conclusion in sections four and five respectively.

2. The Study Area, Urbanization and Methodology

Historically, Wa has served as the headquarters of the Waala state and a rest stop for the Trans-Saharan traders prior to colonization. Even after colonization, Wa served as a service centre and it continues to play this role till date in modern Ghana. Currently, it is the regional capital of the Upper West Region, the last region of the ten regions of Ghana to be established since 14th January, 1983 when the region was created. It plays political and administrative functions and providing a wide range of administrative, commercial and financial services to the rest of the region.

The Wa municipality has experienced a phenomenal rate of urbanization over the past two decades, most of the demographic change occurring within the last decade. The municipality is the largest urban settlement in the region with a population of 71,051 in 2010 growing from 13,740 in 1970, 36,067 in 1984, 66,644 in 2000 (GSS, 1984; GSS, 2000; GSS, 2010). The municipality experienced an inter-censal growth rate of 84.7 per cent between 1984 and 2000. Much of this growth is attributed to high fertility rate and immigration. For instance, total fertility rate for the region is 5.0 compared to a national figure of 3.1 for urban areas in

the country and 4.0 for the whole country (GSS, 2008). Consequentially, population growth rate is estimated at 2.7 percent for the region and 1.7 percent for the country (GSS, 2000).

Migration is one of the main causes of demographic change in the Wa municipality and some of this is caused by the immigration of tertiary student population, especially students of UDS following the siting of a campus of the university (UDS Wa Campus). Total student enrolment of the campus increased from 6000 in the 2008/9 academic year to about 12000 in the 2012/13 academic year (Figure 1).

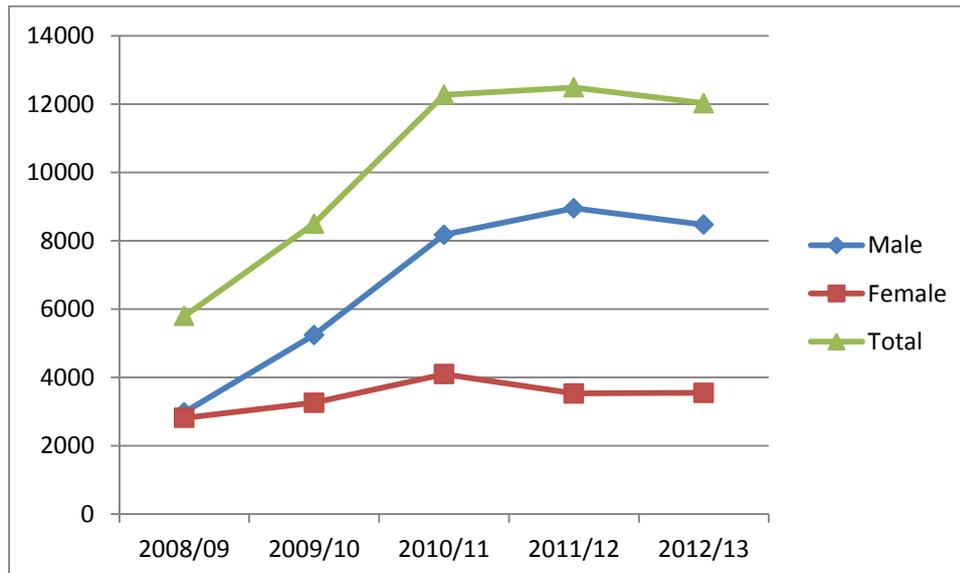


Figure 1. Student enrolment from 2008 to 2013 at the Wa campus

It's clear from the analysis (Figure 1) that student enrolments have consistently increased over the years and this coupled with other immigration streams and fertility rates has spurred demand for housing accommodation in the township. The housing stock in the municipality has increased over the years. For example it increased from 8,788 in 1984 to 20,551 as of the 2000 population and housing census (GSS, 1984; GSS, 2000). Nonetheless, demand far exceeds supply in the housing market and this has given room to abuses of tenants and or will be tenants by landlords/ladies in the township much the same way it occurs across other cities across the country. Accordingly, landlords in cities of Ghana blatantly breach the rent law and abuse tenants in pursuit of their self-interest (Songsore, 2003). Although the Rent Control Department (RCD) was established under the Rent Act of 1963 for mediating between landlords and tenants interest, it has not fared well in performing its function due to capacity problems and only had a physical presence in Wa recently.

This paper draws mainly on a qualitative study that employed eight focus group discussions (FGDs) among four categories of respondents/discussants. The wa municipality has over 15

communities or neighbourhoods that together constitute the Wa municipality. The FGDs were conducted in four purposively sampled communities (neighbourhoods). The sampling was informed by the need for geographic spread. These included Bamahu, a community with high student population and Dobile. The rest include two market squares one in the Central Business District (CBD) and the other in Kanbali, another community/neighbourhood – all of whom providing residential accommodation for indigenes and students alike. The distributions of FGDs conducted were as follows: two among female university students, two among male university students, two among Waala men and two among Waala women, most of whom also being petty traders. The data was analysed by means of detailed description, paraphrasing and use of boxes and tables.

3. Theory of Social Integration

In general the theory of social integration suggest mechanisms by which a group of people, very often a minority group are brought into mainstream societal life and or are accepted by the host group of people, the majority. According to the online Encyclopaedia, Wikipedia (2011), Social integration, in sociology and the social sciences refers to the movement of minority groups into the mainstream of societies. These minority groups may include ethnic minorities, refugees or underprivileged people and that their integration will require learning and speaking the language of the majority and acceptance of rules, laws and common set of values. It does not suggest assimilation of culture and or abandoning one's own culture, but making reasonable trade-offs consistent with the general acceptable norms for living within the society.

According to UNRISD (1994), social integration may be understood and or applied in three varied ways. First, it can be applied in the sense of an inclusionary orientation in which the goal of integration is to improve life chances through equal opportunities and rights for all human beings, particularly the minority group. Secondly, it may be applied in the sense of imposing some cultural values on a minority group for the sake of engendering uniformity in society. Lastly, it may also be applied as a way of simply describing the emerging patterns of human relations arising from the secularization of society.

The origin of social integration theory is attributed to Emile Durkheim, a French sociologist, in his works in the late 19th century that helped establish sociology as a distinct field of study from other social science disciplines like psychology. He considered social integration as the means through which people interact, connect and confirm each other within a community.

The theory proposes that “people experience mental, emotional and physical benefits when they believe they are contributing and accepted part of a collective. Without that sense of connection, they can experience depression, isolation and physical illness that could limit them from experiencing productive, happy lives.” (Hardy. n.d:1; Marijkeanker, 2011). Durkheim explained how social order varied and was maintained in pre-modern and modern societies. He explained that the transition from traditional society to modern society as driven by industrialization and the division of labour was associated with a transition from “mechanical” solidarity to “organic” solidarity as part of his theory of the development of societies in *The Division of Labour in Society* (1893). In mechanical societies, usually traditional, small scale and simple societies, social cohesion and integration come from the homogeneity of individuals and bounded by a common culture, including upholding similar values, common work and life style and kinship ties and familial networks. This is distinct from organic solidarity. The interdependence that arises from specialization of work and complementarities between people in a modern and industrial society is what gives rise to organic solidarity. Thus, it is clear that solidarity, be it mechanical or organic, is the key to societal cohesion. According to Blau (1960), social integration therefore, prevails if bonds of attraction unite its members and that persons interested in becoming integrated are often under pressure to impress the host group that they would make attractive associates.

For this paper, social integration is applied more in the sense of it being inclusionary of minority groups and as a way of describing the emerging patterns of human relations arising from the secularization of society.

4. Results and Outcomes

The results of interaction of students and indigenous Waala communities and families have yielded both positive and negative integration outcomes. Starting from the positive outcomes, the interactions between the two have resulted in a modest degree of social acceptability, cross cultural learning and the promotion of education among the Waala youth.

First, the interaction of students and indigenous Waal families has resulted in modest degree of social acceptability and cross cultural learning. Social acceptability of students to live within indigenous Waala communities and among families – but this is also driven by economic interest, rent payments indigenous house owners derive from the students. From the records, a large array of students find physical and social space among indigenous

Waala communities and families, most of whom not having access to university hostel accommodation. For instance, in the 2012/13 academic year, the total student population was 12021 out of which only 6% (700) were accommodated in university hostels. Thus, about 94% of the student population have to find private accommodation and most of these students live in compound houses together with Waala families.

Secondly, the social interactions between university students who come from a wide diversity of cultural backgrounds across the country and Waala families have also led to modest cross-cultural learning and exchange of values and experiences through living together. According to a female rice seller, *"Some of the students do pray with us, greet us very well and have regard for elders. This is how we want our children to be, there is a male student in my house; he is very respectful, he helps even when you haven't asked him. I wish all UDS students were like this"*. According to male FGD discussants Dobile and Bamahu:

Some of the students are very friendly and good to us in the house. As such, they easily learn waale, the local language but we really don't learn their languages like that because this is our home (FGD discussants, Dobile).

Students learn our language (waale) a lot and sometimes we also do learn theirs a bit. They also eat our traditional food, popularly known as Tuozaafi (TZ). Some students like it very much (FGD discussants, Bamahu).

Female discussants, mainly petty traders, corroborate the assertions made by their male counterparts that cross-cultural learning and exchange of social values occur between students and natives. Accordingly:

Most students, especially female students from southern Ghana learn how to prepare indigenous Waala meals such as T.Z and vegetable soup, bean cakes (Koose) and tubani. They assert that most female students learn how to prepare T.Z in particular before they complete. Conversely, we also learn how to prepare fufu with cassava and plantain from them. This is different from what we know, that is, preparing fufu with yam only. Even as women, we learn how some stews and soups are prepared to go with main meals. It is really lively. Many more male and female students learn how to eat T.Z even if they can't cook it.

The third positive outcome is that university students serve as role models of education to the Waala youth. In particular, female students have had a positive impact on indigenous Waala youth, especially Waala girls – inspiring them to attain higher education. It should be observed that illiteracy rates among indigenous Waala communities have been high and still is. Parents, especially mothers have also been influenced positively about the need for education. Some extracts from male discussants in Dobile shed light on this:

University students have served as role models to some of our female students and now they actually aspire to attain higher education like them.

As for education, we all know that prior to UDS, many people, even the elderly did not take education seriously but now children have actually been influenced by the university students and the very presence of the university here.

Female FGD discussants in *Bamahu* and *Dobile* corroborate the assertions of their male counterparts that university students have influenced their children positively in terms of inspiration for attaining high education, especially the female students influencing Waala girls. They cite a number of changes and examples to support their assertion (Box 1).

That most of their children, young boys and girls now behave like tertiary students, preferably, UDS students. Although there are other tertiary institutions such as the polytechnic and teacher training college, they prefer to copy the university students and sometimes fake university student status for the prestige attached to being a university student.

They further agreed that the university students serve as role models in education in the region. Some of them teach our young children at home voluntarily and or guide them to do their take home assignments. Some even give our children exercises to do and they mark them. According to a discussant, some students go further to organize free extra classes for our children. We appreciate such support because we all want our children to gain university education in the future.

Our children, especially the girls have been inspired tremendously by their interactions with university students, especially female university students. Prior to the University, this was not the mind set of children and so clearly their orientation for higher education is a positive outcome of the presence of university students living among us. Girls are now realizing the need for education and we are happy about that. This is certainly better than early marriage because we have hope that our girls will have a better future.

Box 1: University students as role models of education to Waala youth

As already stated, the interaction of university students have also led to a number of negative outcomes, the first being conflict between students and indigenous Waala families over different ways of social life. Very often, abhorrence, especially of indigenous Waala families of the way of life of students leads to social tension and in extreme cases verbal and physical assaults or violence. Extracts from the contribution of male FGD discussants in *Bamahu* reveal the dislike of the dressing styles of female university students:

- *They are not our children but their way of dressing is very bad. In this community, we are Muslims and this worries us because our children are learning how to dress like these female university students.*
- *There is nothing good about the dressing of female university students.*
- *The dressing of these students is very bad and they have changed our children's way of dressing. Our children are now also wearing miniskirts, short dresses and tops that expose part of their bodies, even including their breasts.*
- *Students, especially female students wear hanging tops, tight trousers, short skirts and dresses that expose their breasts.*

Instances of conflicts between students and indigenous Waala families are common and arise for varied reasons related to unacceptability of the behaviour of students by host families or co-tenants. According to male FGD discussants in *Bamahu*:

Very often we quarrel with students in the house due to their bad behaviour and disrespect for elders. They don't respect us because we are illiterates. They don't pay light bills; they refuse to scrub and clean bathrooms and general surroundings, especially among the girls. A student will rent a room from you as an individual and by the next day you see a pair of or even more than two students. Very often they try to cheat on us this way. Even sometimes, male and female students living together (cohabitation) against our will. What some do is that, they re-rent to colleagues at even higher rates and then they live together as roommates without the consent of us landlords. They also punch holes on our walls even against our advice.

Male FGD discussants from *Dobile* corroborate what those in Bamahu said:

As for their dressing, we had better not talk about it. The female students wear short skirts they call miniskirts. The male students dress like crazy people with their trousers hanging and their panties and bums showing. Even female students also expose their panties and bums in the same wear as a fashionable dressing style called 'I am aware'. These students display very bad, funny and unacceptable dressing. We see them every day our houses because they live with us. In our own families, we can see the changes in the dressings of our children, particularly the girls.

Female FGD discussants (women/traders) dovetail multiple and several negative outcomes arising from students and indigenous community interactions (Box 2).

Women expressed their disappointment and dislike of the way university students dress, both male and particularly females being women themselves. They particularly make reference to days that students organize 'road show floats' as part of celebration of SRC activities. They wear red, dress in weird ways and promote some extend of nudity on the streets of wa and across the town. Majority of the women think yes.

Their worry is that their youth, especially the girls are copying these bad dressings blindly. Accordingly, the days in which Waala girls dressed very well, such as wearing long dresses and scarfs (*Mariyafi*) to cover their bodies sufficiently, and consistent with Islamic traditions are long gone. Even in the past, non-Muslims also dressed well and elderly women felt good and proud to be called by them their mother in laws. Now, most Waala girls think it is a fashion to expose their breasts and buttocks on the street, commonly referred to as "Gentira" dressings. They even do it with impunity.

Even our own daughters in UDS want to wear short skirts and expose their buttocks and breast and they think it is normal. Some Waala girls now go out and come home very late. According to one respondent, some of the guys are womanizers and are always changing women here and there and when we complain they think we are interfering in their privacy.

According to one vegetable seller, I had two UDS students in my house, they were very dirty. They don't do anything in the house even their rooms. But when you see them outside you think they are angels. And our children copy them blindly.

Another social behaviour of students the women lamented over was gambling. According to the women, university students have now introduced gambling into the town and this is a source of worry. There are a few of such game centres where gambling is done and that it's promoting laziness among the Waala youth – because they are joining in the game of gambling. According to them, "our children hardly do any work in the house these days. They go out to gamble with the students. This is gradually destroying our homes. Our children are becoming thieves – they steal our monies for gambling purposes."

Box 2: Unacceptable student behaviour as described by Waala women and traders

Conflicts also occur over threats of ejection and or even in extreme cases ejection of students from their rental apartments. In many such instances, students are ejected inappropriately without even the requisite compensation, such as refund of balances associated with rent payments. In general, ejections from one's accommodation are associated with alleged misbehaviour of students, described to *include – disrespectful behaviour, uncooperative behaviour in payments of joint utility bills, lack of good care and or mishandling of rooms, and cleaning compounds, and cohabitation between male and female students*. According to female FGD respondents contributing on the subject:

Some students have no regard for their landlords/landladies. A year ago, one girl and her friend were ejected from their room because they were not participating in cleaning the compound house. Even sweeping their balcony (veranda) was a problem. Anytime the landlady asked the girl to sweep the back of their room during the dry season, the students murmured in Twi (southern Ghanaian language), show disrespectful behaviour and refuse to do so. Some students also make too much noise and don't like pay water and electricity bills although they use these utilities and bring their friends to come and cook and do everything they want in the house.

On the part of students as explained as female student discussants, students can be ejected for unfair reasons and that such occurrences were common. They cite an example in which a male student was ejected without refund of outstanding rent balances in Kambali until the police intervened when the incident was reported. A discussant cited an example in which a female student was ejected the fourth time from her room for alleged indecent dressing by landladies/landlords. In the most recent incident, the female student was accordingly ejected from her room for indecent dressing. She cited that $\frac{3}{4}$ of her breasts are always showing and that she wears short dresses (mini-skirts) and trousers that expose her G-strings, beads and tattoos all the time. In yet another example, a pair of male students got ejected from their room in Kambali by the landlord because he did not like their behaviour and general life style – complaining they entertained many visitors including different girls in the house, noise making and arguments over football, and drinking of alcohol and drunkenness. In general, female discussants report that several ejections were unfair as in the following:

- Some land lords are very jealous and do not want anybody to visit us student girls especially in the night. We left our first apartment because the land lord who is in his early forties expressed interest in one of us and she did not agree to his proposal, he started preventing even our group mates from visiting us, fought with a number of male visiting students and so finally we had to vacate his house to this current house.
- Some of the land lords too are just cheats, whenever light bills come, they don't show us the total sum but demand any amount of money from us for settlement of electricity bills. There are many instances in which students absorb utility bills of Waala families through the dishonest manoeuvring of landlords/land ladies where students share billing meters with them. They often argue that we use more electricity simply because we use rice boilers and electric irons – and yet they use irons and sometimes kettles for heating water. We've been quarrelling with them over unfair payment of utility bills.

- For student, student girls, receiving many different male visitors can provoke the landlord or land lady of the house and lead to your eviction.
- Some land lords also try to take undue advantage of their positions to make love proposals or 'befriend' us. When they don't succeed, they will surely find fault with you and eventually eject you from the house.
- Some too demand too many things very often from us. Things such as clothes, money, ingredients, and food stuffs among others. When students get fed-up and deny them something they are certain you have, it can create social tensions and lead to self- imposed ejection.

Furthermore, landlords/landladies profile and apply higher rents to students and lower rates to indigenes and or non-students for the same type of residential accommodation. In extreme cases landlords apply exorbitant rent targeted at ejection of particular students if such students put up social behaviour the host families dislike. According to male discussants from Dobile:

Conflicts between landlords and students over rent rates occur because some landlords want fast money and apply relatively higher rents on students who 'miss behave'. They really charge some of the students very high rents. Although this is pathetic, the students call for such punitive measures, especially those that further rent rented rooms to their colleagues under hidden tenancy agreements without the consent of the landlords. When some landlords detect such cases, they apply higher rents to them than indigenes.

It is very common for landlords to apply higher rents on students than indigenes or non-students. In such cases, students in some cases pay double what. This is partly because of the high demand for accommodation by students in town because of the lack of adequate hostel accommodation on the university campus. In exceptional cases, higher rents are applied to students who are known to misconduct themselves. This happens very often in Dobile.

Female FGD discussants were divided as to whether landlords/landladies applied higher rents to students than the prevailing market price. While some agreed it happened others claimed it does not happen. For those who claim it happens, they explained that it happened to students who try cheating on landlords and landladies. They will rent a room at a very low price and bring on board other students as tenants under their own internal tenancy agreements. When house owners detect this, they increase the rent and ask the students to pay additional money or face eviction. In paying additional money, they end up paying very high rate per room. This is how it happens. In other instances, higher rates are simply targeted at students. But some landlords argue that it's meant to cover utility bills or maintain the housing – although it is not always the case. According to some discussants, some students do not take good care of their rooms. They use irons frequently, fridges and heaters and don't pay electricity bills. So we apply high rent rates to enable us settle these bills. It happens every academic year. For those who said no, they said students were not workers and as mothers themselves, they all have children in school, who will definitely stay in someone's house one day. And so, it was not fair to do that.

However, female student discussants unanimously reported that landlords or land ladies applied higher rents to students in general and that they often target unsuspecting newly admitted students who report and are in desperate need of accommodation. In some cases, continuing students are ejected from their rooms to make room for newly admitted unsuspecting students who are more willing to pay higher rents because they are new and desperately looking for accommodation to settle. They also explain that in extreme cases, landlord/ladies apply higher rent to continuing students as a way to ejecting them from the house if they so wish. Discussants cite an example in which a female student was ejected from her room in a compound house in Kpaguri through the application of higher rent rate targeted at the student. While other students were asked to pay between GHC 300 and GHC 400 Ghana cedis, the particular student was asked to pay GHC 500 for similar accommodation and so the student packed and left the compound.

Traders in the market, particularly, retailers in the market profile students and applying higher market prices above the prevailing market prices in the sale of vegetables and consumables, especially foodstuff. Male discussants in Dobile assert as follows:

We hear these stories all the time. That when you speak English in the market, the traders take you for a student and charge higher market prices for goods above the prevailing market prices. We understand it is market women who sell foodstuff and vegetable who do this most often but also those retailers in clothes.

However, female discussants, particularly, traders themselves claim they don't quote higher markets prices for the students. According to them, it may be happening but none of them have done that to a student. They even claim to even reduce prices for students because as a discussant puts it – we all have children.

Nonetheless, female student discussants in Kambali and Bamahu corroborate the assertion that traders profiled students and applied higher market prices for goods above the prevailing market prices. They cite several instances and examples to buttress their stands:

- *In Bamahu here it's happening, you go to Town its even worst. Once you cannot speak Waali (the local language) to bargain or challenge the market price, they sell items on tables at a price higher than the prevailing market price to you. It's better with the super markets, but those selling vegetables on tables or in the market, and even food vendors, they do it very often.*
- *During one vacation, a market woman in the Bamahu daily market remarked to her colleague that ..."the students will leave and we will know the real market women and those cheats pretending to be market women". Accordingly, she said this to a fellow trader in Akan when she had a misunderstanding with her. The impulse of that statement was that her colleague trader cheated on students through unfair pricing (high) pricing and that she would not do well in business when the students are on vacation and actual prices prevail in the market.*

- *A discussant cited that she and her roommate wanted to buy a goat and the goat dealer put a price tag of GHC120.00. They refused to buy and instead gave money to their land lord, he bought that same goat for them at GH¢55.00.*
- *Even at the grinding mills, when we students go there to grind our small flour, tomatoes or pepper often little in quantities, we pay more for services than the natives do for their large quantities of malt and guinea corn. In fact our mates who are natives are far better than us; they can challenge the prices of goods because they are knowledgeable about local pricing.*
- *A discussant narrates as follows: I went to the market with my friend to buy okro. There was already a woman before us who asked about the prices and the seller placed a price tag of GHC 50p. As we were speaking, the seller asked the buyer to give her GHC2.00 so that she will give her change to prevent us from knowing the price. She spoke in the local language Waali but the students had already understood her because they spoke Dagbani which is similar/close to Waali. Thinking that she had outsmarted the students, the trader told the students a unit of okro was selling at GHC 1.00. The students declined the price offer and bought same quantity at GHC 50p from another trader.*
- *Another discussant narrates, she and her roommate's experience: We have been buying from the market, but one day we sent a small boy to buy meat and green pepper in the market for us. We gave him GHC 2.00 for the meat and GHC 50p for the green pepper. When he brought the meat, it was much bigger in quantity than what we get when we go as students to buy at the same amount of money. For the same quantity of pepper the boy bought at GHC 50p, we would have bought it for double the price (GHC 1.00).*

Finally, there is an increasing trend of love relationships between university students and indigenes in two main forms and these sometimes result in negative outcomes – social tensions in homes and teenage pregnancies. On the one hand, there is an increasing trend in teenage pregnancy partly, an outcome of social relationships between indigenous teenage girls and male university students. On the other hand, there is an increasing trend of female university students falling into love relationships with men (non-students) in town, including married men (what is termed the *Alhaji* phenomenon) leading to social tensions at home, hostile behaviour of wives towards female university students and occasionally, result in marriages that do not last. The following extracts from male FGD discussants in Bamahu shed light on the issues:

- *Teenage pregnancy resulting from love relations between male university students and our children is common. We just had one recently in Bamahu where one student impregnated a JHS two girl. She has just delivered recently.*
- *In Dobile, a male university student impregnated teenage Waala girl. She delivered a baby girl a week ago and she and the new born live in the next house, pointing his finger at the house.*
- *There is another recent incidence in which of the male students befriended one of our wives (an indigenes) wife and this led to domestic conflicts and finally divorce.*
- *It's not common for us the men here to befriend female university students. This is because we can't have them because we are illiterates – and so we can't have them as our girlfriends.*
- *Here in Bamahu, conflicts between female university students and our wives occur; but it's not as result of us the men befriending the female students. Rather, it results from completion for water at the bore holes and fee standpipes that we have. The student population have*

increased population of the community to the point that water supply is inadequate for the population.

- *Students indulge in open love and profane behaviour which indigenous families find distasteful and bad teachings to their children.*
- *According to male discussants, here in Dobile, conflicts arise over husbands love relationships with university girls. We hear stories about 'UDS girls snatching husbands' in town but in such cases, the wives rather quarrel with their husbands because they may lack access to the student girls.*
- *As for female university students getting pregnant with the indigenous men, it's rare. We have not heard about this except probably the big officers in town. What are common are male university students impregnating their female counterparts. That is very common. As for us, we can't get those girls easily because we lack formal education. How will one of us handle a female university student? A discussant asked, we are just not meant to get along with them in any courtship relationship.*

5. Discussions

As the results show, the interaction of students and indigenous Waala families has resulted in both positive and negative outcomes. There is 'compromised social acceptability' of students to live within indigenous Waala communities and families – but this is also driven by economic interest, rent payments indigenous house owners derive from the students.

The case of Waala communities and families letting in university students and living with them is the outcome of a compromise between the two to live together in order to achieve varying interest and goals consistent with integration in the sense of inclusionary orientation and goal for improving life opportunities, not of only the minority (UNRISD, 1994), but in this case the majority as well. The incidence of students and Waala living together cannot be described as social integration in the true sense of it because largely, indigenous Waala communities despise of the social behaviour that students put up. From the perspective of the Waala, it is plausible to observe that social integration in terms of integrating university students has not occurred because the two groups tend to have much more culturally differentiated behaviours than common values that should bind them. Equally from the perspective of students, social integration cannot be said to occur in the true sense of it; because students continue to live their social lives largely among themselves, exhibiting what can be described as the unique student way of life and culture, which indigenous Waala communities frown on. This has relevance for the assertion that among Hispanic and Native American college student, ethnicity influenced social integration process by students on campus (Murgui, E and others, 1991). This is at variance with the position by Blau (1960) that social integration prevails if bonds of attraction unite its members. What seems to be happening is closer to organic solidarity, not in the context of the division of labour and

associated interdependencies that Durkheim talks about; but more in the context of interdependence created by market forces, specifically demand and supply in the housing sector. Currently, students are a huge source of demand for rental accommodation and this has driven private investments in compound housing among indigenous Waala families as an important source of income for household sustenance. The average Waala family set aside a few rooms (1-2) rooms within their compounds for renting to students annually. This has become an important source of income for family sustenance so that although most families may despise much of the social behaviour of most students; they compromise and accommodate the students because of the economic benefits they gain from rent. In addition, students are a major source of market for tradable commodities and businesses in town. When they are on holidays, businesses are hit hard because they lose a significant market and when they return from holidays, they gain significant market. Thus, students seem to be spurring local economic growth and development and the indigenous people understand and appreciate this – thus, they accommodate students even if their behaviour is largely an affront to their culture and way of life.

According to the UNRISD (1994), social integration may also be understood as imposing some cultural values on a minority group for bringing about uniformity in society. In the case of interactions between students and Waala communities, it is the minority that has imposed a culture on the majority. The results suggest that although the Waala abhor the general behaviour of students; a process of acculturation has been imposed on the Waala community through the assimilation of these foreign cultural values of students by Waala youth much to the displeasure of their parents. Thus, a process of acculturation has been set in motion and driven by daily interactions between university students and Waala youth. In this case, the minority, the students are the ones who have imposed a 'student culture', foreign to Waala culture and traditions on the majority and host, the Waala. The analysis and description of these emerging dynamics in the relationships between students and Waala in itself consistent with the alternative understanding of social integration as description of emerging patterns of human relations arising from minority and majority group interactions.

6. Conclusions and recommendations

This paper examined the social integration of university students into Waala communities and families in the Wa Municipality, north western Ghana. It concludes that social integration has been partial because both groups have much more differentiated ways of lives, culture and conflicts than the communalities that would otherwise bind them together in an emerging secular municipality. It further underscores that integration outcomes have been both positive

and negative. For the positive outcomes, university students from varied ethnic backgrounds are socially accepted to live in shared compound houses by indigenous Waala families and this also enables modest cross-cultural learning's and exchanges. In addition, university students, especially female students have become role models of education to Waala youth, particularly, young girls – inspires them to attain higher education. In the negative domain, outcomes include conflict between students and Waala families over varied ways of life, conflicts over rents and ejection of students from rental apartments, differential application of rent rates and exploitation of students, exploitation of students through differential application of market prices (higher market prices) by petty traders on consumables in markets on students and finally, rising incidences of love relationships between students and indigenes leading to social tensions and undesirable social outcomes.

The paper recommends that an integrated approach to District Development Planning (DDP) in the municipality within the context of decentralization. The approach should engender community and multi- stakeholder engagement involving the University for Development Studies and Wa Municipal Assembly (WMA) for the promotion of the following: education of students and communities on issues of social integration; creation of platforms for interactions and building bridges between communities and university students; strengthening the Rent Control Board (RCB) to discharge its function of regulating rent and resolving conflicts to avoid exploitation of students; and working effectively with the District Health Management Team to design and implement reproductive health services targeted at the indigenous youth and university students.

References

- Blau, Peter. (1960). A theory of social integration. *American Journal of Sociology (AJS)*. Vol. 65, No. 4, pp.545-556.
- Hardy, C.L (n.d). Theory of Social Integration. ehow.com. Retrieved 7, 2013, from http://www.ehow.com/about_5399164_theory-social-integration.html
- Ghana Statistical Service (GSS)(1984). Population and Housing Census of Ghana: Demographic and Economic Characteristics. Accra: Ghana Statistical Service.
- Ghana Statistical Service (GSS)(2000). Population and Housing Census 2000. Accra: Ghana Statistical Service.
- Ghana Statistical Service (GSS)(2008). Ghana Demographic and Health Survey 2008: Preliminary Report. Accra: Ghana Statistical Service.
- Ghana Statistical Service (GSS)(2010). 2010 Population and Housing Census (PHC) . Accra: Ghana Statistical Service.

Emmanuel K. Derbile, Social integration outcomes of students, '49th ISOCARP Congress 2013'

Marguia, E & Others (1991). Ethnicity and the Concept of Social Integration in Tinto's Model of Institutional Departure. *Journal of College Students Development*, VI 32No. 5, pp. 433-39 (September 1991).

Marijkeanker (2011). Social Integration –Emile Durkheim. StudyMode.com. Retrieved 7, 2013, from <http://www.studymode.com/essays/Social-Integration-Emile-Durkheim-795003.html>

Songsore, J.(2003). "The urban housing crisis in Ghana: Capital, the state versus the people", *Ghana Social Science Journal*. No. 2, No.1, Pp. 1-31.

United Nations Research Institute for Social Development (UNRISD) (1994). *Social Integration: Approaches and Issues*. UNRISD Briefing Paper No. 1., World Summit for Social Development.

Wikipedia(2011). Social Integration. Wikipedia, the free encyclopaedia. Retrieved 7, 2013, from http://en.wikipedia.org/wiki/Social_integration

Title: Development Verses Displacement: Cornerstone of India's Economy; Appraisal on Road Development In India

Authors: Bikram Kumar Dutta

Regional Planner, Associate Manager, IL&FS, New Delhi, India

bikramdutta@hotmail.com

&

Sanhita Bandyopadhyay

Environmental Planner, PhD Scholar, School of Planning and Architecture, New Delhi, India

bsanhita2@yahoo.co.in

ABSTRACT:

India is a developing country and it requires fast space quality infrastructure development, which is the need of current times. For any development, land is required and the land belongs to the people. Government is acquiring land for public purpose. Government of India (GoI) has substantially increased its focus towards infrastructure development, over the last few decades which lead to economic growth of the country. Acquisition of land for public purpose displaces people, forcing them to give up their home, assets and means of livelihood. The GoI recognizes the need to minimize large scale displacement to the extent possible and, where displacement is inevitable, the need to handle with utmost care and forethought issues relating to Resettlement and Rehabilitation (R&R) of Project Affected Families (PAF) and formulate R&R Policies (NRRP 2007 and draft bill 2011). The ground reality differs from it.

Road network is vital to the economic development, trade and social integration. It facilitates smooth conveyance of both people and goods. Size of the road network, its quality and access has a bearing on transport costs. Besides, road network promote specialization, extend markets and thereby enable exploitation of the economies of scale. Global competition has made the existence of efficient road transport and logistic systems in delivery chain an absolute imperative. Easy accessibility, flexibility of operations, door-to-door service and reliability have earned road transport an increasingly higher share of both passenger and freight traffic vis-à-vis other transport modes. Transport demand in India has been growing rapidly. In recent years this demand has shifted mainly to the advantage of road transport, which carries about 87 percent and 61 per cent of passenger and freight transport demand arising for land based modes of transport (i.e. roadways and railways taken together) respectively. Road transport has grown despite significant barriers to inter- State freight and passenger movement compared to inland waterways, railways and air which do not face rigorous en-route checks/barriers.

The total road length in India had increased significantly from 3.99 lakh Kilometre (Km) as on 31st March 1951 to 41.10 lakh Km as on 31st March 2008. Concomitantly, the surfaced road had increased from 1.57 lakh Km to around 20.36 lakh Km over the same period. The total road length had expanded significantly since 1970s. It increased from 9.15 lakh Km in March 1971 to 41.10 lakh Km in March 2008 - an increase of 34.9 % over these 37 years yielding a compound annual growth rate (CAGR) of 4.1 %. The total road network in the country grew from 36.21 lakh in March 2004 to 41.10 lakh in March 2008 reflecting an increase of 4.89 lakh Km yielding a CAGR of 3.2 % over this period.

Available reports indicate that around 21.3 million people are internally displaced populations (IDPs) due to development projects in India. IDPs include those displaced by dams (16.4 million), mines (2.55 million), industrial development (1.25 million) and wildlife sanctuaries and national parks (0.6 million) etc (IDMC, 2007). 21% of total shares transport and communication sector development. This paper appraises the displacement due to road infrastructure development in India's boom economy over the period.

A. DEVELOPMENT :

A preliminary assessment of Five Year Plan (FYP) of Planning Commission suggests that investment in infrastructure during the Twelfth Plan (2012- 17) would need to be of the order of about Rs. 40, 99, 240 crore (US \$ 1025 billion) to achieve a share of 9.95 per cent as a proportion of Gross Domestic Product (GDP). This would have to be a key priority area in the Twelfth Plan in order to sustain and support the targeted growth.

Based on the Eleventh Five Year Plan (2007-12), the Planning Commission has assessed the investment in infrastructure is Rs. 20, 54, 205 crore. The investment in infrastructure was likely to rise from 5.15 per cent of GDP during the Tenth Plan to about 7.55 per cent during the Eleventh Plan, as against a target of 7.60 per cent. This constitutes a significant shift in favour of investment in infrastructure. Except in some sectors, the overall performance of infrastructure during the Eleventh Plan compares well with the initial targets after accounting for the impact of the global financial crisis.

The projected investment in road sector was also significantly lower at Rs. 2, 78, 658 crore compared with Rs. 3, 14, 152 crore in the original projections in eleventh plan. The investment by the Centre is expected to decline due to award of lower than projected road projects by National Highways Authority of India (NHAI) during the first three years of the Plan. The investment by the private sector is also expected to go down due to award of a lower number of projects in the first three years of the Eleventh Plan. However, Ministry of Transport has decided to speed up the award and implementation of National Highways Development Project (NHDP) to achieve a completion rate of 20 kms of highways per day. The less investment from private sector was subject to mainly downfall of economy in global market as well as several risk factors has involved in Indian context. One of the major hindrances is land acquisition and displacement.

1. PHYSICAL GROWTH IN ROAD DEVELOPMENT:

The total surfaced road length grew from 3, 97,948 km (accounting for 43.5% of the total road length) in 1971 to 20,36,063 km (accounting for 49.5 % of the total road length) in 2008 reflecting a more than fivefold increase in surfaced road length. Category wise classification of road length showed that during this period, the length of National Highways (NHs) increased from 23, 838 km to 70,934 km – an increase of over CAGR of 2.8 %. During the same period, the length of State Highways (SHs) increased from 56,765 km to 1,54,522 km (an increase of over CAGR of 2.7 %) and the length of other Public Works Department (PWD) roads increased from 2,76,833 km in 1971 to 8,63,241 km in 2008 (an increase of about CAGR of 3.1 %). Various categories of Urban roads together expanded in length from 72,120 km to 3,04,327 km reflecting an increase of over CAGR of 3.97 %. The highest growth over these 40 years took place in respect of Rural Roads which increased from 3,54,530 km to 24,50,559 km (including 10,61,809 lakh km roads constructed under different schemes registering an increase of nearly CAGR of 5.4 %. The lowest growth, however, took place in the length of Project roads which increased from 1,30,893 km in March 1971 to 2,70,189 km by March 2008 resulting in a growth of CAGR of 1.98 % only. Table 1 depicts the facts of it.

Table 1: Total Road Network in India

	Total (T)/ Surfaced (S)	Surfaced Road Length by			Categories in India		
		2000	2004	2005	2006	2007	2008
Length in Kilometre (as on March 31)							
National Highways	T	52010	65569	65569	66590	66590	667543
	S	51952	65358	65358	66590	66590	66754
State Highways	T	132797	133177	144396	148090	152235	154522
	S	130592	131262	142898	146325	150713	152738

	Total (T)/ Surfaced (S)	Surfaced Road Length by			Categories in India		
		2000	2004	2005	2006	2007	2008
Other PWD Roads	T	730680	719257	786230	803669	835003	863241
	S	601512	597866	643705	664652	689935	719383
Rural Roads *	T	1948043	2140569	2266439	2308125	2393488	2450559
	S	545378	678533	681761	714326	761429	810258
Other Roads **	T	462235	562935	546522	554177	569085	574516
	S	244366	287749	261576	266791	276091	286930
All India	T	3325765	3621507	3929439	4003930	4140544	4109592
	S	1573800	1760768	1846629	1910792	1997323	2036063

* Rural Roads include Panchayat Raj roads and roads constructed under Jawahar Rozgar Yojana (JRY) as of 31.3.1996 & Roads constructed under Pradhan Mantri Gram Sadak Yojana (PMGSY) since 2000.

** Other Roads include Urban Roads and Project Roads.

As on 31.3.2010, the total road length under National Highways is 70,934 km.

Source: NHAI

Government has envisaged huge investment for construction and upgradation of National Highways under various phases of NHDP over the medium term. Details of various phases of NHDP (Fig 1) are as under:

NHDP Phase-I: This phase was approved in December 2000. It envisaged - (a) Four laning of National Highways comprising Golden Quadrilateral (GQ) linking major metros, viz. Delhi, Mumbai, Chennai & Kolkata having an aggregate length of 5846 km; (b) North-South and East-West corridors covering 981 km; (c) Port connectivity by upgrading 356 km of NHs linking major ports in the country and; (d) upgradation of 315 km of other National Highways. The total aggregate length of NHs for upgradation envisaged under Phase I was placed at 7498 km. The total length completed upto 31st March 2010 was 7328 km.

NHDP Phase-II: This phase was approved in December 2003. The main thrust of this phase involved upgradation (4 laning) of (a) North-South (Srinagar to Kanyakumari) & East-West (Silchar to Porbandar) corridors covering a distance of 6161 km and; (b) upgradation of 486 km stretch of other National Highways. The total length coverage for upgradation under Phase - II involved 6647 km out of which 4465 km has been completed by 31st March 2010.

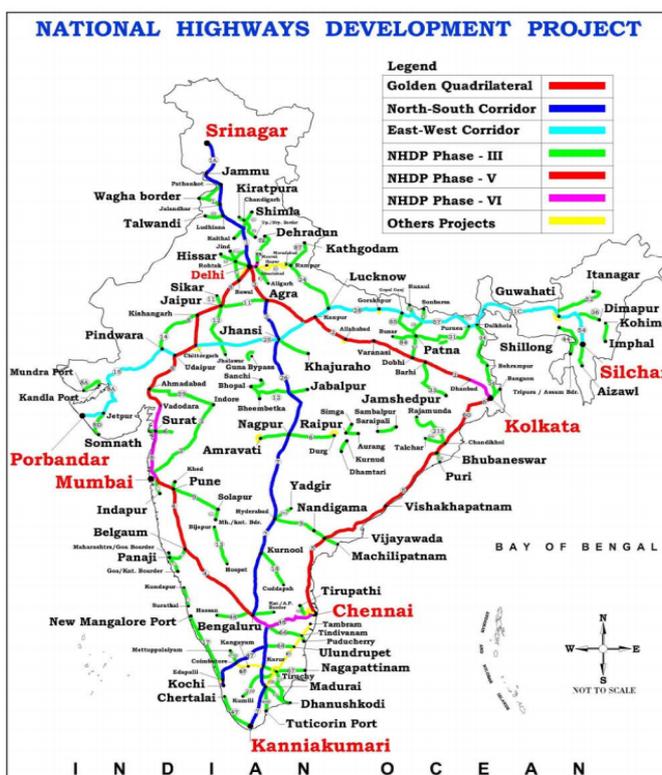


Fig 1: NHDP Roads

NHDP Phase-III: NHDP Phase-III involves 4-laning of 12,109 km of high-density stretches of NHs connecting State capitals, important tourist places and places of economic importance through Public Private Partnership (PPP) basis. Out of this, implementation of 4815 km on BOT was approved under NHDP Phase IIIA. NHDP Phase IIIB involving implementation of the balance 7294 km was approved in April 2007. Till 31st March 2010, 1581 km of road length had been completed.

NHDP Phase-IV: This phase involved improvement of 20,000 km of NHs to two lanes with paved shoulders.

NHDP Phase-V: This phase was approved for six laning of 6,500 km of existing 4 lane highways in October 2006 on Design Build Finance and Operation (DBFO) basis. This included 5,700 km of GQ and 800 km of other selected stretches.

NHDP Phase-VI: This phase, approved in November 2006, envisaged development of 1000 km of access controlled four/six lane divided carriageway expressways on DBFO basis.

NHDP Phase-VII: This phase was approved in December 2007 for construction of standalone ring roads, by-passes (including improvements of NH links in city), Grade Separated Intersections, flyovers, elevated highways, Road Over Bridges (ROBs), underpasses and service roads on BOT Toll basis. The status of national highway is shown in table 2.

Table2: Status of National Highways (as on 31st March 2010)

Lane Status	Length in km
6 lane and above	731 (1 %)
4 lane (2 lane dual carriageway)	14,584 (20.6 %)
2 lane (7 meters)	37,488 (52.8 %)
Single/Intermediate lane	18,131 (25.6 %)
Total length of National Highways	70,934 (100.0%)

Source: NHAI

The National Highway network of the country spans about 70,934 km. The National Highway Development Project (NHDP), covering a length of about 54,000 km of highways, is India's largest road development programme in its history. In many ways, this ambitious and path-breaking initiative of the Government of India, which began in the late 1990s acknowledged the importance of private sector in India's infrastructure development.

2. FISCAL GROWTH IN HIGHWAY SECTOR

India has an extensive road network of 3.3 million km - the second largest in the world. The National Highways have a total length of 70,934 km and serve as the arterial road network of the country. It is estimated that more than 70 per cent of freight and 85 per cent of passenger traffic in the country is being handled by roads. While Highways/ Expressways constitute only about 2 per cent of the length of all roads, they carry about 40 per cent of the road traffic leading to a strain on their capacity. The number of vehicles on roads has been growing at compounded annual growth rate (CAGR) of approximately 8% in the last five years.

The development of National Highways is the responsibility of the Government of India. The Government of India has launched major initiatives to upgrade and strengthen National Highways

through various phases of the NHDP. NHDP is one of the largest road development programmes to be undertaken by a single authority in the world and involves widening, upgrading and rehabilitation of about 54,000 km, entailing an estimated investment of more than INR 3,00,000 Crore (USD 60 billion).

National Highway Development Program (NHDP) Phase I&II consists of widening and strengthening of NH sections connecting four major metros of Delhi, Mumbai, Chennai & Kolkata, popularly known as "Golden Quadrilateral" amounting to a total length of 5846 km and improvements to North-South corridors connecting Kashmir with Kanyakumari and East-West corridors connecting Silchar with Porbandar amounting to a total length of 7300 km. It was launched in 1999 covering a length of nearly 14,0000 km at an estimated cost of Rs. 54,000 crore (at 1999 prices) (USD 12.317 billion). The NHAI project under study is under NHDP phase III, which was launched in 2005 for upgradation and 4 laning of 10,000 km of selected high-density corridor of highways at an estimated cost of Rs. 55,000 crore (at 2005 prices) (USD 12.544 billion). In addition to implementation of NHDP, the NHAI is also responsible for implementation of NHAI projects on National Highways (mainly road connectivity to major ports in India) at a cost of Rs. 4,000 crore (at 1999 prices) (USD 0.913 billion). NHAI is now responsible for implementing on National Highways of length around 24,000 km. NHAI will act as an employer and nodal agency for the NHAI project preparation and execution of NHDP. Out of total cost of NHDP i.e. Rs. 54,000 Crore or US\$ 13.2 billion in the following manner as shown in Table 3 fund will raise. All the NHAI projects under NHDP Phase III are envisaged to be implemented on Design, Build, Finance Operate and Transfer (DBFOT) basis. Finance share of NHDP as follow:

Table 3: Financing of NHDP

Total Cost	Rs.54,000 Crore (INR)	US\$ 13.2 Billion
Likely sources	Rs. Cr. (On 1999 Prices)	US\$ Billions (On 1999 Prices)
Cess on Petrol and Diesel	20,000	4.90
External assistance	20,000	4.90
Market borrowings	10,000	2.40
Private Sector Participation	4,000	1.00

Source: NHAI.

The total Rs. 3690.11 crore has been utilized for capital work in NHAI by 31st March, 2011 Out of total estimated Rs. 54,000 crore. Out of total estimated project investment 75% has already invested for the project establishment. The physical growth it has achieved only 45.80% which is lower than the estimated amount. Build Operate Transfer (BOT) concession contracts with an estimated Total Project Cost of approximately USD 23 billion (including BOT/DBFOT2-Toll and BOT- Annuity contracts) have been awarded under various packages till January 31, 2011 and these projects are expected to be fully operational by 2015-16.

The consistent policy and institutional framework, which has been the backbone of the more than INR 3,00,000 Crore (USD 60 billion) NHDP, also conveys the intent and commitment of successive governments to encourage increased private sector participation in developing the arterial road network of the country to world class standards. More than 60 percent of the estimated investment requirement is expected to be privately financed.

The early success of Public-Private-Partnerships (PPP) in the NHDP, arguably, set the tone for

similar initiatives in other infrastructure sectors and has provided the single largest opportunity for private financing and management of infrastructure services.

The NHAI is mandated to implement the NHDP. Most of the projects have been developed or are under development on Public Private Partnership (PPP) basis through Build Operate and Transfer (BOT)-Annuity and Build Operate and Transfer (BOT)-Toll mode. Typically, in an annuity project, the project IRR is expected to be 12-14% and equity IRR would be 14 -16%. For toll projects, where the concessionaire assumes the traffic risk, the project IRR is expected to be around 14-16% and equity IRR around 18-20%. The fiscal allocation has stated in table 4.

Table 4: Financial Performance - Expenditure on NHDP (Rs. Crore) (INR)

S. No	Year	NHDP I	NHDP II	NHDP III	NHDP IV	NHDP V	NHDP VI	NHDP VII	Total
1	Upto year 1998	163.44	0	0	0	0	0	0	163.44
2	1998-99	328.16	0.8	0	0	0	0	0	328.96
3	1999-00	732.05	3.7	0	0	0	0	0	735.75
4	2000-01	1239.51	7.52	0	0	0	0	0	1247.03
5	2001-02	3878.36	1.92	0	0	0	0	0	3880.28
6	2002-03	6021.37	12.55	0	0	0	0	0	6033.92
7	2003-04	7422.56	75.03	0	0	0	0	0	7497.59
8	2004-05	6116.51	184.44	3.35	0	0	0	0	6304.3
9	2005-06	4317.46	1773.35	51.02	0	0	0	0	6141.83
10	2006-07	2089.63	5465.31	1362.28	0	0	0	0	8917.22
11	2007-08	1863.03	10169.22	3050.3	0	557.15	0	0	15639.7
12	2008-09	1257.72	11621.94	3961.59	0	729.52	0	0	17570.77
13	2009-10	1098.85	8968.83	5755.47	0	2516.9	0	0.18	18340.23
	Total	36528.65	38284.61	14184.01	0	3803.57	0	0.18	92801.02

Source: NHAI

2.1 PRESENT PRACTICE:

Initially, projects under NHDP were awarded as item rate cash contracts. However, going forward, Public Private Partnerships (PPP) is going to be the main mode of delivery for future phases of NHDP. While there are a number of forms of PPP, the common forms that are popular in India and have been used for development of National Highways are:

- Build, Operate and Transfer (Toll) Model** on DBFOT basis: tollable Highway projects.
- Build, Operate and Transfer (Annuity) Mode** on DBFOT basis: annuity payments from NHAI that would cover his cost (construction, operations and maintenance).
- Special Purpose Vehicle (SPV)** for Port Connectivity Projects: wherein NHAI contributes upto 30% of the project cost as equity.
- NHAI is also proposing to award projects under a long term **Operations, Maintenance and Transfer (OMT)** concession.

2.2 RISKS IN PRESENT PRACTICE

Concessionaire Risk: With the introduction of the MCA, the risks involved in project and contractual issue is the commercial and technical risks which relating to construction, operation and maintenance are allocated to the concessionaire, as it is best suited to manage them. Other commercial risks, such as the rate of growth of traffic, are also allocated to the concessionaire.

Construction Risk: The concessionaire is required to commence construction works when the financial close is achieved or earlier date that the parties may determine by mutual consent. The concessionaire shall not be entitled to seek compensation for any prior commencement and shall do it solely at his own risk.

O& M Risk: Concessionaire to operate and maintain the project facility (includes road and road infrastructure as specified in the concession agreement). Failure to repair and rectify any defect or deficiency within specified period shall be considered as breach of responsibility.

Financial Risk: The concessionaire shall at its cost, expenses and risk make such financing arrangement as would be necessary to finance the cost of the project and to meet project requirements and other obligations under the agreement, in a timely manner.

Traffic Risk: The MCA provides for increase or decrease of the concession period in the event the actual traffic falls short or exceeds the target traffic.

Land Acquisition Risk: NHAI is responsible for acquiring the requisite land for the Project Highway

Common Risk: Force Majeure Risk - Force Majeure shall mean occurrence in India of any or all of Non-Political Event(s), Indirect Political Event(s) and Political Event(s),

B. DISPLACEMENT

Substantial changes in the environment often transform the patterns of human settlement and may result in population resettlement. Resettlement is the process through which population displaces from their habitat and/or economic activities relocate to another site and reestablish life. In sociology and anthropology as well as in the environmental literature, the term resettlement is used most frequently in the context of policies, planning activities and social research dealing with displacements caused by development. The term appears in such expressions as “involuntary resettlement”, “involuntary displacement and resettlement,” “forced resettlement,” and “resettlement and rehabilitation,” “involuntary displacement and resettlement” and “forced resettlement,” and “resettlement and rehabilitation. Environmental changes that cause resettlement fall into two categories: natural and human-made. The first category includes environmental disaster such as floods, droughts and famines, desertification, volcanic eruptions, and so forth. The second category includes environmental interventions such as the construction of highways, the building of hydropower dams and reservoirs, and the expansion of strip mining, the conversion of forested areas into cultivated agricultural lands and the construction of airports, railways and ports

1. RESETTLEMENT AND REHABILITATION AS PER INDIAN CONTEXT

The concept of resettlement is used also to describe certain development programs that encourage and finance “voluntary” resettlement. Voluntary resettlement has taken place under some government sponsored programs that made available large areas of uncultivated and uninhabited lands to farming families who reside elsewhere and who possess little or no land. Such programs for encouraging voluntary resettlement were organized in the 1960’s and 1970’s in Africa, in the 1980s in Indonesia, in Latin America, and so forth. In 1980, some of us decided to work for the proper rehabilitation of the tribal oustees of the Sardar Sarovar Project (SSP), a large

multi-purpose dam being built by the **Gujarat** Government on river Narmada. The major phases are:

- The 1st policy thought in the year 1985 (During Narmada Bachao Andolan), a Committee under B. D. Sharma: **A policy for displaced tribal communities.**
- 1993 2nd policy drafted by the Rural Development Ministry and in 1994, the draft was revised but did not accept rehabilitation as a right of the displaced.
- 3rd policy drafted in February 2004, as **National Policy on Rehabilitation and Resettlement** for Project Affected Family.
- 4th policy which was frame worked in 2007 and named as **National Resettlement & Rehabilitation Policy, 2007.**
- And now the Government of India had formulating another Draft bill on **National Land Acquisition and Resettlement & Rehabilitation Bill, 2011**
- **World Bank R&R Policy 2000:** The World Bank's OD 4.30 requires a review of the legal framework for resettlement in preparing a resettlement plan
- **ADB R&R Policy 1995:**

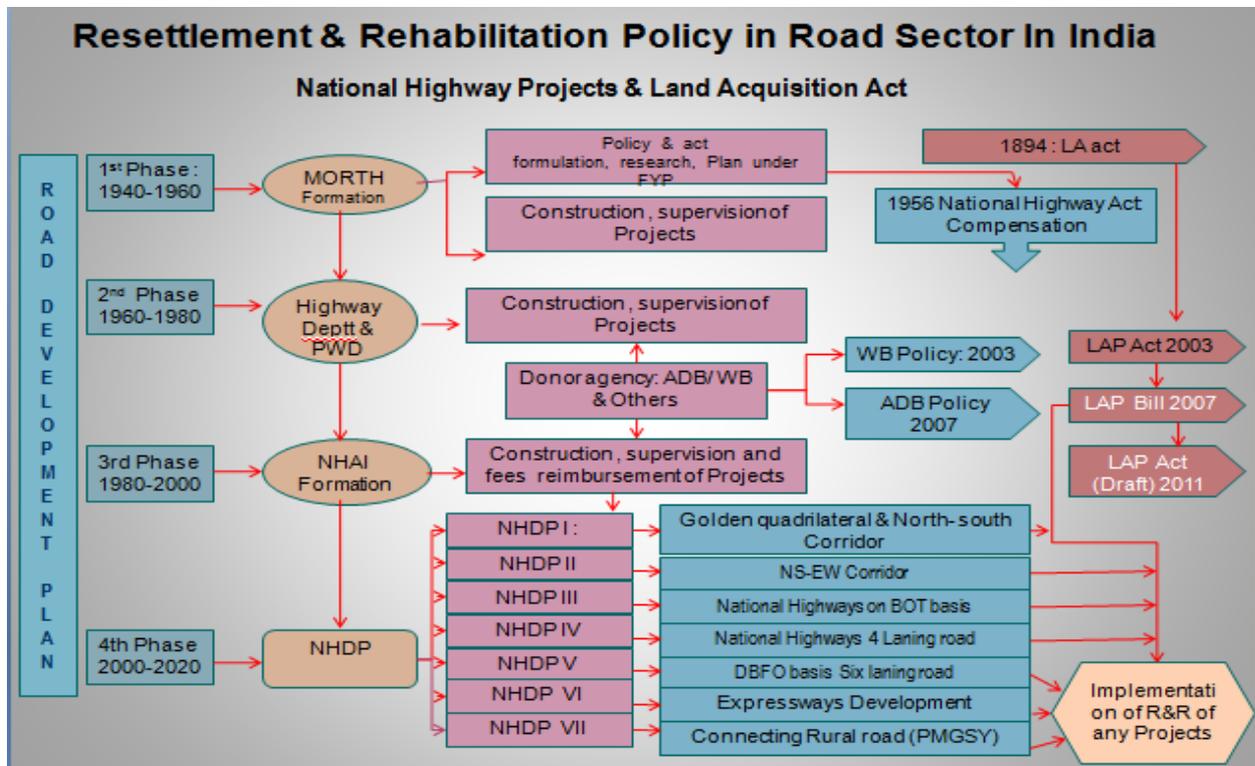
The Comparative assessment of different R&R policy with the purview of Road Projects in India is stated below:

Table 5: Comparative Assessment of Different R&R Policy in Road Project

CATEGORY	ADB1995	WB 2000	PDTC 1985	NPRR 2003	NRRP 2007	NLARR Bill 2011
OBJECTIVE	<ul style="list-style-type: none"> • Avoid involuntary resettlement • Ensure PAF assistance 	<ul style="list-style-type: none"> • Involuntary resettlement avoided. • Providing sufficient investment participation of PAF in implementation 	<ul style="list-style-type: none"> • Involuntary resettlement to Tribal community only. 	<ul style="list-style-type: none"> • Non-displacing or least-displacing • Plan R&R of PAFs including Tribal's and vulnerable sections; 	<ul style="list-style-type: none"> • Minimize of displacement • Rehabilitation package with participation of PAFs special care for weaker section through mutual cooperation. 	<ul style="list-style-type: none"> • Avoid displacement • Institutional mechanism for implementation, monitoring & grievance redressal.
APPLICABILITY	All ADB's operations	Components of the regardless of the source of financing.	Only Tribal Outstees	<ul style="list-style-type: none"> • Applicable in whole India (except J&K state). • If displace 500 families or more in plain areas and 250 families in hilly areas, 	<ul style="list-style-type: none"> • Applicable in whole India (except J&K). • If displace 400 families or more in plain areas and 250 families or more in hilly areas, 	Applicable everywhere whoever is displaced
PROJECT TYPES	significant, not significant or no involuntary resettlement	Two category: Major, and Minor (WB OP 4.12 para 25)	No Classification	No Classification.	No Classification. (only emphasis separate category for linear project)	Classified
AFFECTED FAMILY & AFFECTED PERSON	Affected person people/family /firms/ private have house, land	Any person loses the right to own, use, or otherwise benefit from a-built structure, land	Title holders	Affected family means property substantially affected & residing continuously for a period of ≥3 years	Affected family residence or property substantially affected	Affected family residence or property substantially affected
EMPOLYMENT	Alternative employment for non agricultural displaced	Alternative employment for non agricultural displaced.	Only land	Nil for landless only compensation	Affected families (at least one person per nuclear family) shall get preference for employment	Displaced and other affected families shall be eligible for employment (one member/family)

CATEGORY	ADB1995	WB 2000	PDTC 1985	NPRR 2003	NRRP 2007	NLARR Bill 2011
COMPENSATION IN TERMS OF HOUSE / LAND / MONEY	<ul style="list-style-type: none"> Assistance for relocation, Compensation to replace lost assets, livelihood and income. 	<ul style="list-style-type: none"> Shelter, infrastructure in the resettlement area. Compensation to replace lost assets, 	<ul style="list-style-type: none"> Assistance for relocation 	<ul style="list-style-type: none"> Any affected PAF who lost his/her house due to project, may be allotted free of cost house ($\leq 150 \text{ m}^2$ of land in rural areas, $\leq 75 \text{ m}^2$ of land in urban areas). 	<ul style="list-style-type: none"> Any affected PAF who lost his/her house due to project, may be allotted free of cost house ($\leq 250 \text{ m}^2$ of land in rural areas, $\leq 150 \text{ m}^2$ of land in urban areas). 	<ul style="list-style-type: none"> At least 1/10th of an acre of land free of cost in a resettlement habitat for homestead purpose Rs. 1,50,000/- to each displaced family for construction of house
OTHER BENEFITS	Relocation and transfer expenses. Assistance	<ul style="list-style-type: none"> Vocational training to the member of PAF. Moving allowances. Support after displacement for a transition period. 	Nil	<ul style="list-style-type: none"> Monthly subsistence allowance i.e. 20 days minimum agricultural wages/month/1 year from the date of displacement. Training to PAP. Cattle shed assistance of Rs.3000 Shifting assistance of Rs.5000 	<ul style="list-style-type: none"> Monthly subsistence allowance i.e. 25 days/wages/month/1year Training to PAP. Scholarships to eligible member of PAF. Cattle shed assistance \geq Rs.15,000 Shifting assistance of \geq Rs.10,000 	<ul style="list-style-type: none"> Training to PAF for Type-A, Type-B project. Rs.2,000/- per month Rs.10,000/- each family for temporary sheds. Transportation allowance of Rs.2,000/- Registration cost of land up to 5 acres
R & R BENEFITS	Not specified	Not specified	Nil	Rs.10000/-	Rs. 20000/-	Rs. 250000/-

The different policy and applicable road development projects in India is showing the following flow diagram.



2 RISKS IN DISPLACEMENT:

Given their complexity, the process of displacement, transfer and resettlement involve substantial socioeconomic risks for the affected populations. These risks are:

- **Landlessness**, which occurs when expropriation of land removes the foundation upon which people's productive systems and livelihoods are constructed;
- **Joblessness**, which occurs when resettles lose access to their employment and remain unemployed or underemployed;
- **Homelessness**, which occurs when the displaced people lose shelter and cultural spaces;
- **Marginalization**, which occurs when families lose economic power and other assets and spiral on a downward mobility path;
- **Food insecurity**, which occurs when resettles fall into temporary or extended undernourishment;
- **Increased morbidity and mortality** as a result of the outbreak of relocation-related illnesses, transmitted diseases, social stress and psychological trauma;
- **Educational loss**, particularly by children who because of displacement interrupt school or do not return to school;
- **Loss of access** to the previous common property natural resources (pastures, forests, rivers and quarries ect.), which causes drops in incomes and livelihood levels and increases pressures on natural resources at the resettlement sites; and
- **Social disarticulation**, which bears apart the social fabric and dismantles mutual help networks and patterns of community organization.

Under Section 4 of Land Acquisition Act (1894) or under section 3A of National Highway Act (1956): land can be acquired only for "Public Purpose". "Land acquisition and Resettlement & Rehabilitation" are inevitable process in Highway infrastructure development project process in India as well as over the world. The process of displacement, transfer and resettlement involve substantial socio-economic risks for the affected populations as stated by *Cornea* in resettlement and rehabilitation risk in project development.

Resettlement and Rehabilitation Risk in Project Development

"The process of displacement, transfer and resettlement involve substantial socio-economic risks for the affected populations" impoverishment risks and reconstruction (IRR) model by Cornea

Landlessness	Landlessness	Joblessness	Homelessness	Marginalization	Food insecurity	Increased morbidity & mortality as a result of relocation	Educational loss;	Loss of access to the previous common property & natural resources (like etc);	Social disarticulation	Consequences in world*	Consequences in India**
Dam	●	●	●	●	●	●	●	●	●	100% families	100% families
Highway	●	●	●	●	●	○	○	●	●	30-50% PAP	40-60% PAP
Airport	●	●	●	●	●	○	○	●	●	100% families	100% families
Township	●	●	●	●	●	●	●	●	●	100% families	100% families
Industry	●	●	●	●	●	●	●	●	●	100% families	100% families
Mining	●	●	●	●	●	●	●	●	●	100% families	100% families
Miscellaneous	●	●	●	●	●	○	○	●	●	-	marginal

● high
 ● moderate
 ○ low

* Japan, Canada, Norway, Brazil, Columbia and China : matrix developed by cornea 2001, WB Report
 ** Case studies : Sardar Sarovar Project, Ukai Dam, NHAI Projects, Jewar Airport , Jhari-raniganj Eiat township displaced for coal firing.

C. DEVELOPMENT VSs DISPLACEMENT

If we can analyse the parent state from where the coinage of R&R policy has evolved the displacement of Road development is very high 23.05% i.e Gujarat (Narmada Bachao Andolan).

Table 6: Category-wise Decadal Land Acquisition in Gujarat 1947-2004

Categories	1947-1960	% share	1961-80	% share	1981-90	% share	1991-04	% share	Grand Total	% share
Water Resources	32260.76	13.89	674050.20	56.55	689957.50	66.93	522123.50	78.22	1918391.96	61.44
Industries	2891.16	1.24	40740.95	3.42	87181.21	8.46	49415.30	7.4	180228.62	5.77
Mines	24.31	0.01	29.92	0.00	2089.63	0.2	4918.78	0.74	7062.64	0.23
Non Hydel	178.63	0.08	5727.70	0.48	8506.99	0.83	1873.99	0.28	16287.32	0.52
Defence & Security	59.74	0.03	860.81	0.07	4981.04	0.48	889.59	0.13	6791.19	0.22
Environment Protection	16.48	0.01	1542.68	0.13	288.95	0.03	0.00	0.00	1848.13	0.06
Transport and Communication	168626.90	72.58	309046.00	25.93	175048.60	16.98	67081.00	10.05	719802.49	23.05
Human Resources	9634.17	4.15	51045.38	4.28	9371.83	0.91	374.05	0.06	70425.44	2.26
Farm & Fisheries	1079.90	0.46	1836.95	0.15	826.25	0.08	2.88	0.00	3745.99	0.12
Urban Development	13605.16	5.86	75257.87	6.31	32137.06	3.12	15917.76	2.38	136917.84	4.38
Refugee Resettlement	7.82	0.00	67.30	0.01	0.00	0.00	794.20	0.12	869.34	0.03
Social Welfare	1023.06	0.44	23602.51	1.98	5443.97	0.53	317.47	0.05	30387.01	0.97
Tourism	130.99	0.06	283.27	0.02	99.20	0.01	111.95	0.02	625.42	0.02
Government Offices	771.84	0.33	2953.48	0.25	14625.99	1.42	3361.12	0.50	21712.44	0.70
Unknown	2020.19	0.87	4860.21	0.41	285.83	0.03	350.87	0.05	7517.11	0.24
Total	232331.20	100	1191905.0	100	1030844.00	100	667532.50	100	3122613	100.00

Source: Government Reports

Total no of displaced Ratio is found the following table:

Table 7: Category -wise Decadal PAFs in Gujarat State 1947-2004

Project Category		Type of Land Utilized			Total	Total No. of Persons Affected/ Displaced
		Revenue	Forest	Government		
Water Resources	Land Utilized	19,21,186	10,08,623	1,92,119	31,21,927	-
	Families	2,54,119	1,52,471	50,824	4,57,414	23,78,553
industry	Land Utilized	1,80,296.1	94,655	18,030	2,92,981	-
	Families	15,056	9,034	3,011	27,101	1,40,924
Mines	Land Utilized	7,062.646	3,708	706	11,477	-
	Families	441	265	88	794	4,127
Non Hydel	Land Utilized	16,925.88	8,886	1,693	27,505	-
	Families	1,212	727	242	2,182	11,344
Defense & Security	Land Utilized	6,872.38	3,608	687	11,168	-
	Families	264	158	53	475	2,471
Environment Protection	Land Utilized	1,848.13	970	185	3,003	-
	Families	280	168	56	504	2,620
Transport & Communication	Land Utilized	7,20,016.50	3,78,009	72,002	11,70,027	-
	Families	1,44,880	86,928	28,976	2,60,784	13,56,076
Human Resources	Land Utilized	70,425.44	36,973	7,043	1,14,441	-
	Families	1746	1,048	349	3,143	16,342
Farm & Fisheries	Land Utilized	3,745.99	1,967	375	6,087	-
	Families	763	458	153	1,373	7,141
Urban Development	Land Utilized	1,36,917.80	71,882	13,692	2,22,491	-
	Families	9,104	5,462	1,821	16,387	85,213
Refugee	Land Utilized	869.34	456	87	1,413	-
	Families	69	41	14	124	645
Social Welfare	Land Utilized	30,387.02	15,953	3,039	49,379	-
	Families	2,187	1,312	437	3,937	20,470
Tourism	Land Utilized	625.43	328	63	1,016	-
	Families	69	41	14	124	645
Government Offices	Land Utilized	21,712.45	11,399	2,171	35,283	-

Project Category		Type of Land Utilized			Total	Total No. of Persons Affected/ Displaced
		Revenue	Forest	Government		
	Families	795	477	159	1,431	7,441
Not Known	Land Utilized	7,636.49	4,009	764	12,409	-
	Families	1,651	991	330	2,972	15,453
Total	Land Utilized	31,26,527.00	16,41,427	3,12,653	50,80,606	-
	Families	4,32,636	2,59,582	86,527	7,78,745	40,49,472

Source: Government Reports

Available reports indicate that around 21.3 million people are internally displaced populations (IDPs) due to development projects in India. IDPs include those displaced by dams (16.4 million), mines (2.55 million), industrial development (1.25 million) and wildlife sanctuaries and national parks (0.6 million) etc (IDMC, 2007). 21% of total shares transport and communication sector development.

References:

1. Central Road Research Institute [CRR], (1963), History of Road Development in India. New Delhi.
2. Central Road Research Institute [CRR], (1982), Road user cost studies in India, Final Report, Central Road Research Institute, New Delhi.
3. Central Road Research Institute [CRR], (2001), Updating of Road User Cost Data, prepared for Ministry of Road Transport & Highways, New Delhi.
4. IRC, (1984), Twenty Year Road Development Plan 1981-2001, prepared by Indian Roads Congress for Ministry of Surface Transport, Government of India.
5. IRC, (1988), Environmental Impact Assessment Guidelines for Highway Projects, Indian Roads Congress, New Delhi.
6. IRC: SP: 30 (1993), Manual on Economic Evaluation of Highway Projects in India (First Revision), Indian Roads Congress, New Delhi.
7. IRC, (2001), Road Development Plan Vision: 2021, Government of India, Ministry of Road Transport and Highways.
8. IRC: SP: 20 (2002), Rural Roads Manual, Indian Roads Congress, New Delhi.
9. Ministry of Rural Development [MORD], (2001), Manual for Preparation of District Rural Roads Plan for PMGSY, Government of India.
10. MORD (2004), Guidelines for Pradhan Mantri Gram Sadak Yojana (PMGSY), Ministry of Rural Development, Government of India.
11. Ninth Five Year Plan Document (1997-2002), Vol. I & II, A Nabhi Publication, February 2000.
12. Environmental Impact Assessment & Social Impact Assessment - Decision Making Tools for Project
13. Appraisal in India: Bikram Kumar Dutta and Sanhita Bandyopadhyay, 2010, International Journal of
14. Human and Social Sciences, 5:6 2010 (pg 356-361).
15. 'The Impoverishment Risk and Reconstruction Model for Resettling Displaced Populations' in Risks and Reconstruction. Experiences of Re-settlers and Refugees, ed. M. M. Cernea and C. McDowell. Washington, DC: World Bank.
16. Dislocation and resettlement in development From third world to the world of the third-Anjan Chakrabarti and Anup Dhar, 2009 by Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX144RN.
17. Hemadri Ravi Dams, Displacement, Policy and Law in India, World Commission on Dams (<http://www.dams.org>).
18. Parasuraman Social Impact of Displacement by development projects on women in India (1993, August), ISS, New Delhi.

Sustainable Urbanism in Coastal Environment: an applied project to expanding urbanized zone of Aracaju City, Sergipe, Brazil.

Sustainable Urbanism in Coastal Environment: an applied project to expanding urbanized of the zone of Aracaju City, Sergipe, Brazil.

Marina Gonçalves Garcia, University of Vale do Rio dos Sinos, Brasil.
Antônio Jorge Vasconcellos Garcia, Federal University of Sergipe, Brasil.

1. Introduction

The beaches are coastal environments with deposits of unconsolidated material, formed by the interaction of the continent (rivers that arrive in port material to the coast) and the sea. The main process includes reworked sediments by waves, tides, coastal currents and wind processes. The beaches are dynamic and sensible environments and responsible for important functions, mainly a special protection for adjacent ecosystems, where lived many species of animals and plants (Souza et al; 2005).

Despite of the human occupation, one of the crucial factors for degradation of natural coastal environment, other factors also operate to the occurrence of degradation processes. Thus, it is necessary to know the sediment dynamics of the beaches and the natural and anthropogenic mechanisms that interfere with coastal processes. After these to be achieved the proposition of preservation program will be important to environments preservation during the urbanization project implementation.

The Sergipe State follows the global trend of occupation and use of the coast for various activities (Carvalho and Fontes, 2006). On coastline of Sergipe, especially in the stretch where they understands the estuaries of Japaratuba and Vaza-Barris rivers, is located the higher income and higher population densities in the state. In this excerpt comprising just over 50km of coastline are located with industrial complex, port, tourism and housing.

Besides the strong anthropic occupation in the area, it is also characterized by the occurrence of mangroves, dunes fields, sandbanks recovered by xerophytic vegetation, sand beaches, becoming this area very sensible under the coastal dynamics. This complex human and natural system asked by multi-disciplinary studies to understand the relationship between the anthropogenic and natural aspects over the coastal zone.

The first approach was carried out field surveys and data requests for recognition and mapping of processes occurring on the beaches over the coast line between the estuaries of Japaratuba and Vaza-Barris rivers. The estuary of Sergipe River, that is located Aracaju City, is located between these both. The results of this investigation identified some critical erosion points, with serious problems of retreat of the shoreline and environmental degradation. Our studies are related to coastal line situated between the Sergipe and Vaza-Barris rivers, where is localized the Expanding Zone of Aracaju City.

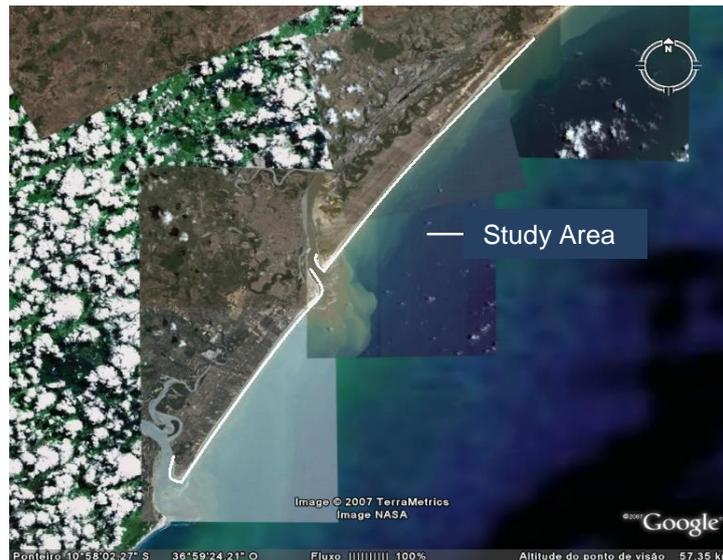


Figure 1: Image representing coastal study. Source: Google Earth, 2004, modified.

2. Environmental Impacts

The human occupation is being one of the natural environments through the construction of urban areas that must rigorously be preceded of studies of Ambient Impact. The Expansion Zone of the Aracaju City (Figure 2), in Sergipe State (Brazil), as well as come being busy without concern with the consequences, in terms of actual damages to the flora and fauna, to the proper environment (coastal dunes and lagoons integrated to the littoral ecosystem) and hydrological systems (underground water and lagoons). Many of the projects that today are implanted in the studied area are compromising the ambient sustainability of the region, making impracticable the pluvial and underground water draining, improving the proliferation of human contaminants agents in the groundwater and of superficial waters (lagoons and mangroves).

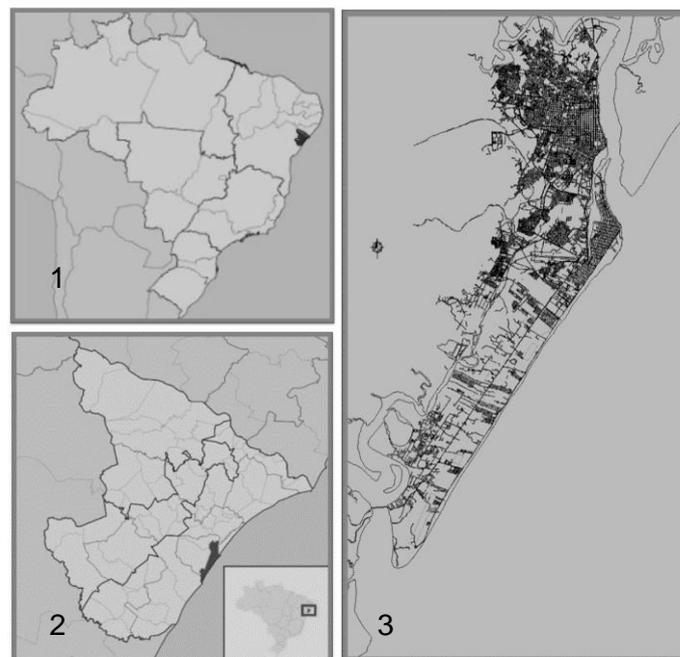


Figure 2: Geographical context of the city of Aracaju highlighting the main routes of connection between the center and Expansion Zone (3), Sergipe (2) Brazil (1).

3. Diagnostic Aspects

The “geoenvironmental urbanism” is a reply to urbanism developed in areas of recognized environmental fragility, as littoral and coastal zones.

The search for solutions that add skills to modify the environment without interfering drastically with the sustainability is the major challenge to be overcome by the society in such contexts of territorial occupation.

The proposal to "urban adequacy of the Aracaju City", Sergipe, Brazil, aims to bring sustainable urban development to the expansion zone, located in a coastal environment defined by 20.70 km².

The coastal area where Aracaju City is located has high environmental fragility. A complex of sand dunes and coastal lagoons, associated at salt marsh vegetation and sandbank, represents a fragile coastal ecosystem that must be maintained and integrated into the process of urbanization.

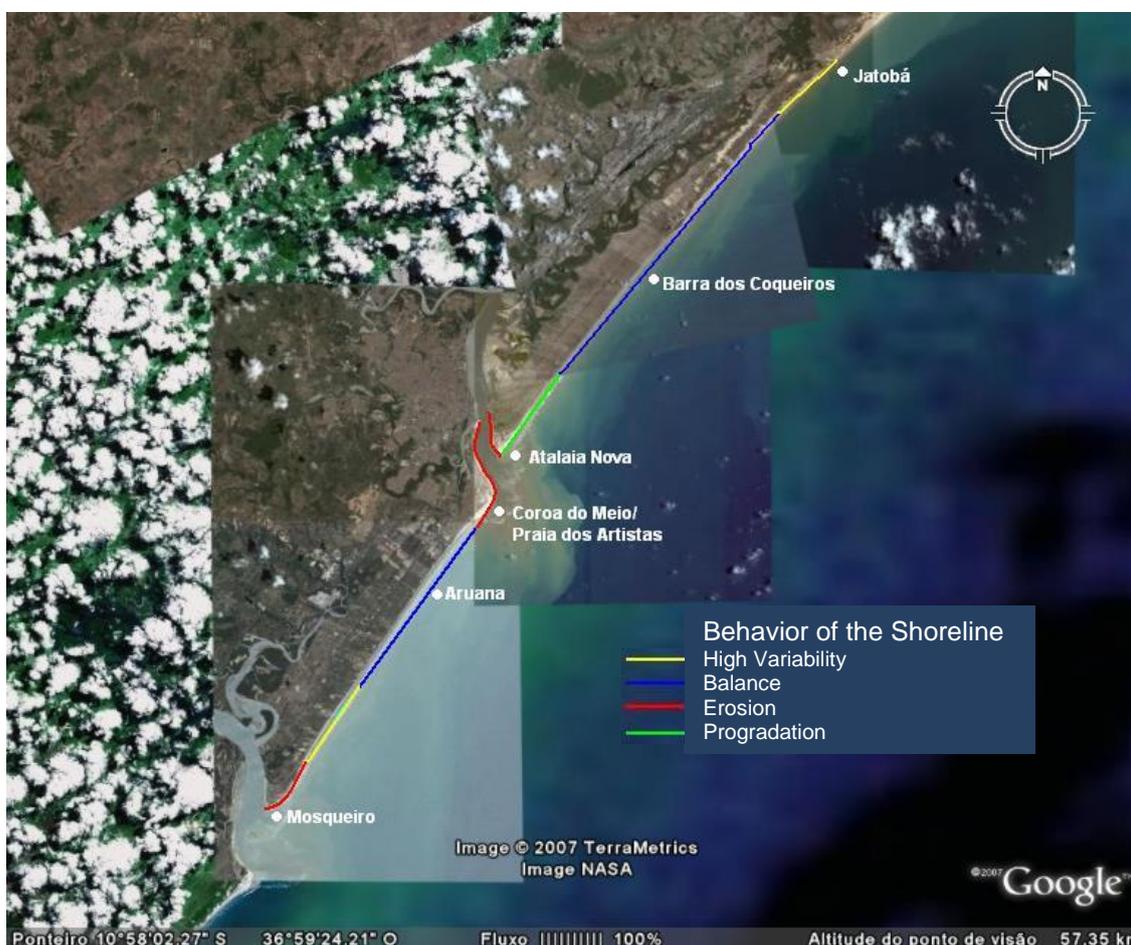


Figure 3: Real behavior of the shoreline in the studied area. Source: Google Earth, modified.

Based on observations and conclusion of this work is possible to conclude that in some areas with greater human interference the biggest problems occur related to the retreat of the coastline, caused due to the changes in the dynamics of these coastal sites. The most critical areas are associated with the estuaries of the three rivers that cover the study area (Japarutuba, Sergipe and Vaza-Barris rivers) (Figure 3).

4. Methods

The diagnosis of problems promoted by disorganized urbanization need to consider the present relationship between the urban and the natural elements destroyed. The mapping of the current state of urbanization and the remnants of natural environments possible to be used as reference points need to be considered to the Sustainable Planning to Aracaju City.

These natural elements were analyzed by aerial photographs (source: performed by ortophotomap Base Aerial Photography and Projects SA), mapping the distribution and height of sand bodies forming dunes and ridges of lagoons and sandbanks areas, and especially the distribution of flora and fauna in each eco-system identified (Figure 4).

The geological and biological knowledge need to be contributed to the proposed distribution and suggestion of new buildings and access roads, in order to ensure the survived of ecosystems and of the ecological ways between ecosystem environments. Another important aspect to be considered is the dynamic of hydrologic flow, both surface and underground, in order to maintain the natural runoff and prevent flooding by the damming of the flows generated by human works, as now recorded without proper planning.

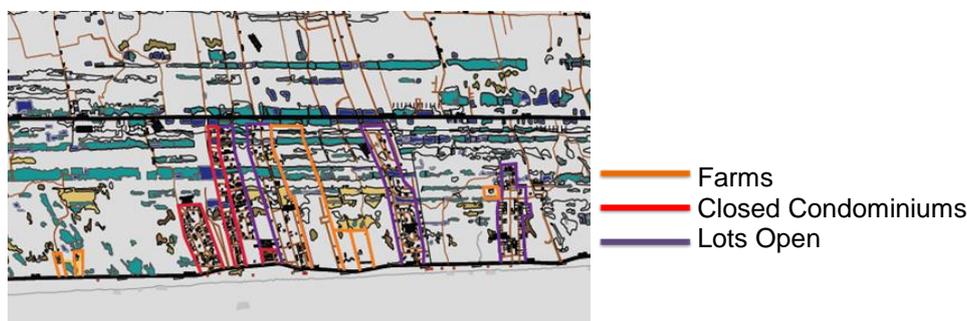


Figure 4: Mapping of the main economic enterprises established in the expansion zone of of Aracaju and targets of the presented suggestions of adequacy in this work.

5. Indicative of Environmental Risk

5.1 Sergipe River Estuary:



Figure 5: Comparative image of the estuary of Rio Sergipe. To observe the occurred changes in the morphology of the mouth of a river. Photos of the years of 1979 (satellite Landsat 2) and 2004 (Google Earth), respectively.

The estuary of the Sergipe River (Figure 5) is the most complex area and further altered by humans across the coastline encompassed by this work. Since the year 1975 the estuary

undergoes modifications to enable the occupation of areas of the mouth. The intervention occurred was the largest landfill of sandbanks that bordered the river banks to make possible the occupation of the neighborhood of Coroa do Meio Urbanized Area (Carvalho and Fontes, 2006).

Among the changes in the dynamic coastal jetties causes, the main ones are: (a) modifying the conditions of the local longshore introducing wave patterns completely foreign to the environment, (b) altering the dynamics in the distribution of sediments, (c) almost completely interrupting the longshore; (Dias, 1993).

All these elements that compose the impacts generated by piers occur in the estuary of the River Sergipe. It was observed that the jetties, events associated with high tides and strong winds aggravate increasingly the retreat of the shoreline in Atalaia Nova and Coroa do Meio, more precisely in Praia dos Artistas (Figure 6).



Figure 6: Advance of the sea on the bars of the Beach of the Artists.

5.2 Atalaia Beach - Aruana Beach - Naufragos Beach - Jose Sarney Beach:

These four beaches, situated between the estuary of Sergipe and Vaza Barris rivers, represent important touristic points. Hotels, restaurants and others commercial and habitation edifications are distributed along these four beaches.

Two of these beaches need special attention, the Náufragos and Jose Sarney beaches., because a large part of the commercial areas is located just a few meters of the influenced zone by the sea during the high tides (Figure 7).

The same problem occurs in parts of the Jose Sarney Highway that was constructed on a dune field's area and very closed to the sea. This highway was completely destroyed near to the Vaza-Barris River estuary (Figures 8 and 9).



Figure 7: This photo evidences the proximity of the comercial point of the beach of the Sarney in relation to the sea during the high tides.

5.3 Vaza-Barris River Estuary:

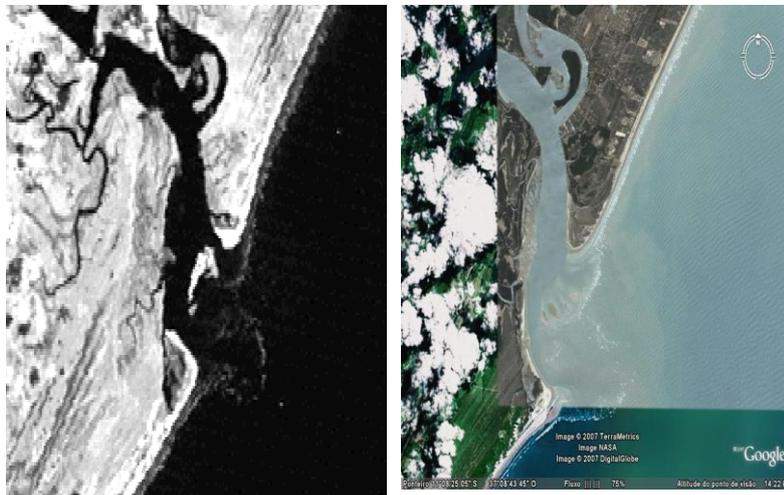


Figure 8: Comparative image of the estuary of the river Vaza-Barris, years of 1979 (satellite Landsat 2) and 2004 (Google Earth) respectively.

The estuary of Vaza-Barris River is characterized as very dynamic coastal environment (Figure 8). The wave actions and coastal currents in the region inhibit the development of mangroves, facilitating the movement of sands and the erosion of the mouth of the river (Carvalho and Fontes, 2006). The construction of the highway did not considers the geologic knowledge about the area (Figure 9 and 10).



Figure 9: Destruction of the track that of the access to the lighthouse of the Mosqueiro. 2007/08/12.



Figure 10: This photo shows the emptiness that was left by the destruction of the highway. 2007/08/12.

6. The Next Step: A Proposal of Urban Adequacy - Aracaju Integrated To the Environment

The Dra. Augusta Maria Vargas, manifest in the following way with regard to the urban development of Aracaju: “Planned in the current days, Aracaju would be vetoed by the ambient evaluation of the current law. However, the construction of a sustainable city is possible and only viable with the elimination of the agreement of the untouchable nature, that “would congeal” Aracaju, as well as of the agreement of the unwanted natural environment, to be conquered and to be artificialized”.

The south region of Aracaju, close to the border with the Bahia state, presents great potential for investments that are being planned and developed, therefore, is a region that needs of a urbanely adequacy plan.

The socio-economic stagnation to the process of urban development to Aracaju city at this area would be as catastrophic as the damage caused to the environment if this development won't happens to be sustainable.

Some Integrated Project could be suggested in advance.

6.1 Residential Condominiums

The concept of “closed condominiums” (Figure 11) is in opposition at the concept of “opened cities”, where the distribution of the building and roads want to be harmonic with the topography and the natural elements as dunes, natural lagoons, coastal and mangrove vegetation. These elements shelter a specific and fragile fauna and flora assemblage.

The territorial divisions adopt three basic principles: 1- The first one that consider the environment, biological and hydrologic aspects; 2- The second one that consider the occupation of the spaces harmonized with the physic environment; 3- and the last one in according with the Brazilian Environmental Legislation (Federal and Local). In this way, the considered territorial divisions must present enough irregular aspects that allow the distribution of the lots of well adjusted form to the environmental aspects.

The natural elements such as dunes, lagoons and vegetation were considered as part of the urbanism project in each territorial division, thus making possible, the preservation of the natural elements and in some cases, its proper revitalization, in according with the determinations of the Brazilian Environmental Legislation (Figure 12).

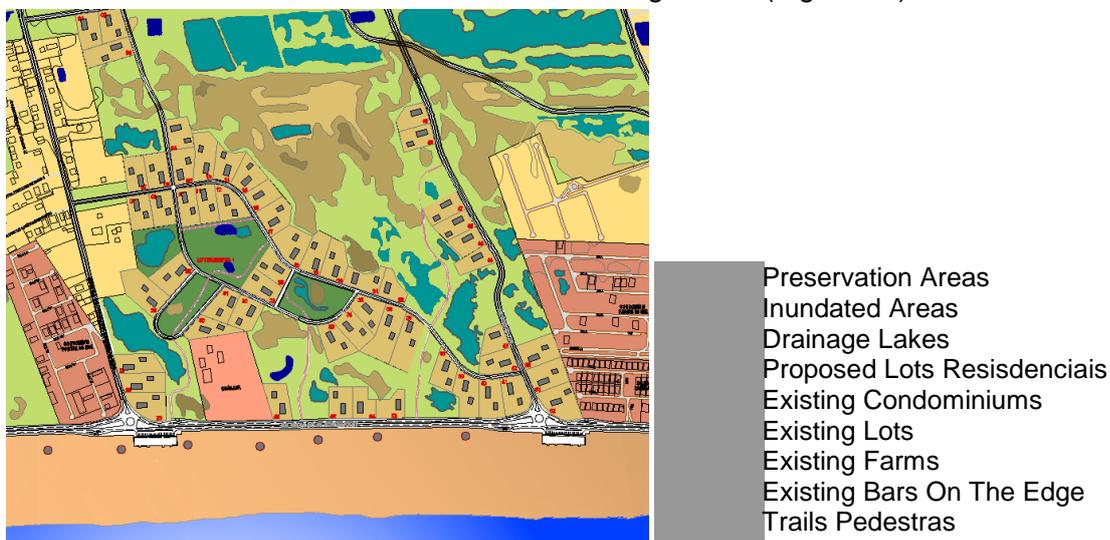


Figure 11: Model of “open condominiums” in urban environment, assuring the sustainable urbanism in coastal environment to zone of expansion of the Aracaju City. Area of environmental preservation integrated with access ways and commercial polar regions.



Figure 12: The Highway of access to the built zones must be planned in order to allow to the flow of vehicles and pedestrians without intervening with the flow of waters (underground and superficial).

References:

BITTENCOURT, Abílio Carlos da Silva P. et al. Atlas de Erosão e Progradação do Litoral Brasileiro – Sergipe, 2006.

CARVALHO, Márcia Eliane Silva; FONTES, Aracy Losano. Estudo ambiental da zona costeira sergipana como subsídio ao ordenamento territorial. Geonordeste, ano XV, nº2, 2006.

DIAS, J.M Alveirinhos. Estudo de avaliação da situação ambiental e proposta de medidas de salvaguarda para a faixa costeira portuguesa. Cap. IV, 1993.

GARCIA, Marina Gonçalves. Projeto de Adequação Urbana Zona de Expansão da Cidade de Aracaju, Sergipe. Trabalho de Conclusão de Curso de Arquitetura e Urbanismo, Universidade do Vale do Rio dos Sinos – UNISNOS, São Leopoldo, RS, Brasil. (2010)

SOUZA, Célia Regina de Gouveia et al. Quaternário do Brasil. Ribeirão Preto. Holos editora, 2005.

TELES, Guilherme Santos, PINTO, Daniele Suzane da Silva, ARAUJO, Gustavo Nunes de , SOARES, Júlio César Vieira; ROCHA, Liana Matos Rocha.. Litoral em Risco: a Construção do Olhar Geológico no Litoral Sergipano, 2007.

Study on Tianjin Public Housing Residential District Planning to Meet the Needs of Migration in Rapid Urbanization

Gong Yuan, Xiao Yu, Lu Li, Tianjin urban planning and design institute, China

1 Background

Along the rapid urbanization, the housing problem of medium and low-income residents in cities has been one of social problems, which is drawing the attention of government in the world for a long time. In present China, both the national policy and market of housing system are in the process of perfecting, which pay more attention to the low-income residents and rural residents. At the same time, planning and design ideas, criterion and statute of low-income residential districts are in the process of promoting.

In late 2008, the General Office of the State Council issued *the Several Opinions on Promoting the Stead Development of the Real Estate Market* and proposed to strive for solving the problem of transforming urban low-income poor family's houses and shantytowns basically for 3 years. And public housing construction has become an important method to solve housing problem, promote healthy real estate market and meet people demand. In June 2010, seven national ministries jointly issued *Guidance on Speeding up Development of Public Rental Housing*, and asked every area to formulate the development plan and annual plan of public rental housing, and organize to carry out by years. Before and after the policy issued, every area has carried out the corresponding plan and construction about public rental housing, the major layout is that the public rental housing groups with large amount and small scale are distributed at every area of a city, which brings inconvenience for the service level and final-period management of supporting facilities.

2 Tianjin public housing Residential District development situation

With own reality, Tianjin formulated the public rental housing developing strategy "reasonably building in central city, large homeland at periphery of city"; particularly, a lot of new homelands are planned at the periphery of the central city since the beginning of 2006 and became an important measure of pushing the housing construction, driving the development of small towns at suburb, and satisfying the housing demand, wherein the constructed Huaming new homeland was selected into Shanghai World Expo in 2010 and shown to the world as the best practice area of city. Now in Tianjin, large-scale public mixed residential districts at edge of city core area with convenient traffic condition, which named new-homeland, are one kind of good choices for the low-income residents as well as medium residents.

Wherein the Shuangqing new homeland is located at the north part of Tianjin and covers 3 square kilometers; the current land mainly includes farmland and accompanies with a few channel and pond. The land is closely adjoined to outer ring express way, 15 km to the center of Tianjin, and 13 km to Tianjin Station; this area has good traffic environment and preliminarily formed a road traffic system formed by a highway, an express road, main and secondary roads; 2 subways in plan will pass through this area, therefore, this area enjoys superior geological position and regional advantages (figure 1).

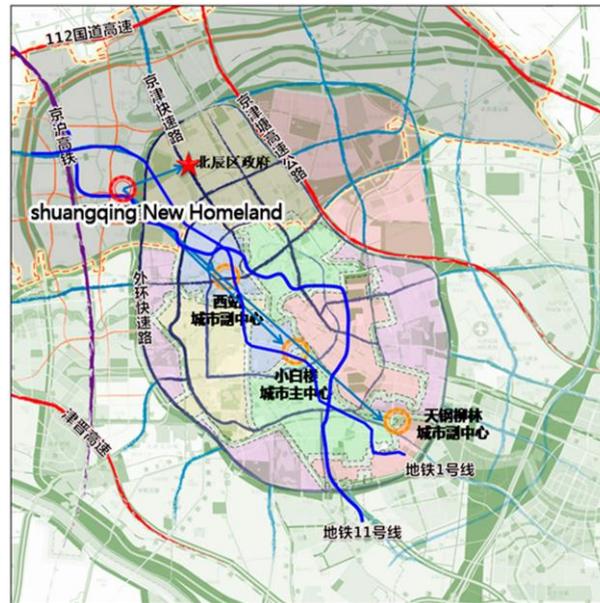


Figure 1: Traffic condition of Shuangqing new homeland

3 case study: planning method and feature of Shuangqing new-homeland

3.1 Model of big mixing residence and small group

By following the security housing model of “big mixing residence and small group”, the residential product includes public rental housing, low-cost commercial residential building and ordinary commercial residential building (figure 2); therefore, the residents of public rental housing can organically fuse with the residents of commercial residential building, and equally enjoy the public service without psychological gap, thereby avoiding the formation of a new slum.

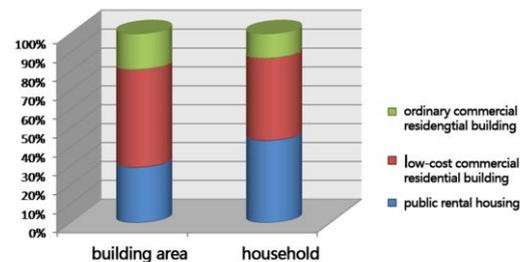


Figure 2: Residential product of Shuangqing new homeland

3.2 Core idea stressing on regional coordination

The homeland security housing community is not alone, and capable of really reflecting the theme of humanistic concern by being integrated to the urban life and regional development. Shuangqing new homeland takes traffic as the entry point in planning, structures the road system for regional balance, contacts demonstrated town in south-north direction, communicates the central city in east-west area, and arranges the new homeland center at the core area of the principal bidirectional axis,

thereby a good grading service relationship with the main center of the area is formed, good service at the inner part of the new homeland is realized, and it becomes an important consisting part of Shuangqing area achieving the development and location of new north livable area of Tianjin central area. Moreover, the travel convenience of new homeland residents is guaranteed, residents can get a job at this area conveniently, and thus residents can live and work in peace and contentment really.

3.3 Respect of ecological environment and local memory

A brand-new security housing community must protect the ecological environment of the base, reserve the existing element of the base, create own cultural deposits, and promote overall quality of the area, thus its health and sustainable development can be realized. Shuangqing new homeland concentrates on renovating the current channel and surrounding land of the base, plans it to be an ecological valley, realizes the communication with surrounding water system, and forms a small cycle of the entire regional ecological system. The planned ecological valley covers about 25 hectares, and 2.2 km long, and 40-200 meters wide; it becomes an important ecological breeding land of the new homeland, links various functions in series, provide a place of leisure and entertainment for the whole community, and realizes the balance of environment and landscape (figure 3).



Figure 3: Ecological valley design of Shuangqing new homeland

3.4 Model of guiding space by green transport

One of the key points of security housing community planning is to realize the green and convenient travel goal. By fully using the traffic advantage of two rails, Shuangqing new homeland arranges a public traffic system connected with the rail stations, and realizes the traffic service system with relatively high accessibility between the new homeland and the central city, the public traffic stations within 500 meters is completely covered by the

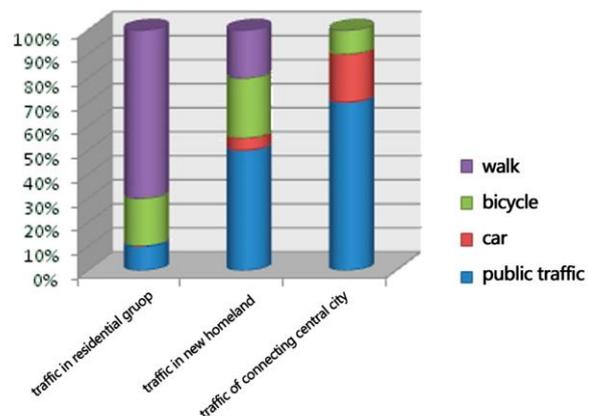


Figure 4: Green transport of Shuangqing new homeland

main traffic network system in the area, and the traffic network system reaches in front of every residential building through a slow system. Finally, the green traffic mode of public traffic, bicycle and walk mainly in the new homeland security housing community is realized (figure 4). The plan is focused on deeply studying the security housing community at the rail station area, has carried out the comprehensive real estate development by combining the rail station. Starting and ending stations of public traffic are planned at the bottom layer to realize the no transit with the rail traffic; the bottom layer and roof platform of the building are properly developed to be the public facility of community service, thereby creating a good landscape service environment. The security housing community is intensively constructed in the form of point type high-rise, so that the utilization efficiency of land is improved and the regional value is promoted (figure 5).



Figure 5: Comprehensive real estate development of Shuangqing new homeland

3.5 Exploration of public service supporting standard of public rental housing

In actual life, there is a big difference among building area per capita of living communities in all levels. In view of this, the demand of living community in all levels shall be considered when the thousand-people index is checked by the planned population number of the residential community. Shuangqing new homeland is in the control index, and carries out the non-differential control with the commercial housing item on community building density, limit height of building, layer height, greening rate, and other indexes for guaranteeing the living quality of the public rental housing area; as considering about the particularity of public rental housing, population per household and plot ratio shall be adjusted, wherein the population per household is adjusted from 2.8 people/house to 2.4 people/house, and the plot ratio is adjusted from 2.5 to 3.0. According to the characteristics of the public rental housing user, individual public supporting facilities are adjusted so that it can accord with the using characteristics of the public rental housing better. It specifically includes: primary school, kindergarten, and other education facility shall lower the thousand-people index by 20% according to the requirement of the households structure; the community culture activity station and resident's activity field shall raise the thousand-people index by 10% according to the age structure and demand of

residents; The nursing home shall be shared with surrounding living area without compulsive requirement according to the age structure of the community residents; according to the income level and travel manner of residents, the parking space for bicycle shall raise by 20%, and the index for locomotive shall lower by 25%.

3.6 Structure of security housing community model of “small family, big community”

Viewing from the design of the house layout to the external environment, the plan of the public rental housing community has performed the directive consideration and design, and pointed out the design standard of the house layout. For the public rental housing is characterized by small living area, a part of living function, including receiving visitors, reception, party, is concentrated in the community, so that the group center of the public rental housing becomes a platform of interpersonal communication, and greatly shortens the distance of residents. Through the spirit molding of the field, residents generate the sense of identity and belonging on this community, simultaneously, safety of this street is enhanced, and the complexity and difficulty level of the high-density community management are reduced within limits. Specific to the supporting standard of the public service facility, the group of 300*200 meters street outline scale is a model community; the new homeland project adds a public canteen, tea room, a washhouse, a chess and card room, a fitness room, a swimming pool, bathrooms, small size hotels, community medical stations, police service room, room for community management, and other facilities in the public facility supporting of every model community; through a part of overhead first layer of the building, the enclosure of corridor of the building, affiliated opening space of the public building, two-level public spaces of group courtyard, and other design methods, a comfortable and convenient public service is formed, a part of demand of internal household space is transferred to the public space of the community, thus the development model of “small family, big community” is realized (figure 6), the requirement on intensive and efficient development is reflected, and the human-based concern is spread.



Figure 6: Overhead first layer and enclosure of corridor for public community

3.7 Assurance guiding system by proper technology

Directing at the characteristics of the security housing community, the new homeland plan stresses on the development idea of structuring an ecological community by a proper technology. The plan designed a rainwater open trench with greening landscape effect, which can make rainwater flow into the water system in the community and is used for supply the water for landscape and wetland landscape. Rainwater in normal year can strive for zero discharge, thereby saving water for greening and irrigation. Reclaimed water through strict treatment can be reused by residents on the basis that every index reaches standard strictly; the treated recycled water will be used for the greening and irrigation of this community, thus the burden of inside water is reduced. The demonstration function of the security housing community in terms of water resource utilization is really realized. The plan adopts the intensive heat supply method to supply heat, preferentially uses clean energy source and intensive solar water heating system; moreover, the soil source hot pump, the underground water source hot pump, and sewage source hot pump techniques are tried. A low-cost energy-saving and environmental-protection ecological circulatory system of new homeland is structured. Through calculation, energy source can save about 13, 000 ton standard fuel yearly by promoting the solar energy utilization and ground source hot pump technology; finally, the ratio of renewable energy sources of Shuangqing new homeland area in the regional energy source consumption reaches 6.7%, which is higher than the 3% development goal of Tianjin.

4 conclusion

Since starting at the beginning of 2012, Shuangqing new homeland has completed the construction of million square meters of public rental housing and low-cost commercial residential building at present; it is predicted that the first phase of the public rental housing and a part of low-cost commercial residential building will be checked in at the end of 2014, and the second phase project of the public rental housing will be checked in at the end of 2015. Along with the gradually construction of Shuangqing new homeland, the planning work and method has performed in-depth thinking on guaranteeing people's livelihood, maintaining social equity, and other core ideas. It is a good try in more concerned about the demand of migration of a lot of low-and-moderate-income population in rapid urbanization progress, and more focused on the housing demand of urban "sandwich" group; and carried out beneficial exploration on slowing down the population pressure in central city and pushing forward the construction of new demonstration area at suburbs.

Endnotes

Planning group of Shuangqing new homeland: Tian Ye, Xiao Yu, Bian Qingliang, Gong Yuan, Sun Hua, Zhao Guang, Xu Jing, You Kun, Wang Chengxin, Zheng Zhaowei, Ma Chicheng, Zhao Chunshui, Chen Xu, Dong Tianjie, Yang Yi, Tian Yuan, Han Yu, Zhang Jing

References

- [1]Yu Lijuan, Ideal and reality on security housing, well-off level, June 2009: 46-48
- [2]Technical Standard of Tianjin Public Rental Housing Construction, Tianjin Planning Bureau, 2010
- [3]Tianjin Shuangqing New Homeland Plan, Tianjin urban planning & design institute, 2011
- [4]Zhao Peinan, New policy of Chongqing public rental housing: seek to solve the difficulty of public rental housing, China Investment, September 2010: 88-91
- [5]Tian Ye, Study on mixed habitation of all levels of Chinese city in transformation period: 2007

Authors:

Gong Yuan , Xiao Yu , Lu Li
Planner, Tianjin urban planning & design institute
Tianjin, China
Email:gongy20001@163.com
Fax:86-022-28012347



IR HELENA CHAJA HEYNING

Design for Shrinkage Generating New Opportunities and Wealth¹

Helena Chaja Heyning, The Netherlands

Analyzing trends show that the population in the Netherlands is growing until 2040 (16,7>17,8 million). However over the past two decades the number of residents in the peripheral regions decreased and this decline continues. Out-migration and aging go together: less people, less households, youngsters leaving for the big city never to return, and the old and less educated people lagging behind as well as the poor ones, isolated and stuck. Primary neighbourhood facilities, shops and schools close down. In its wake the peripheral regions also experience economic decline, it speeds up the departure of the able people -they look for a job elsewhere. A shrinking region begets a 'poor image' much to the distress of the local politicians; authorities go through a mourning process of denial first and acceptance in the end. It might take some years before they assess the situation, recognise the new opportunities and start the necessary transformations bearing in mind 'turn a disaster into opportunity'.²

1. Identifying ones opportunities

Decline or shrinking in a region is not the end, on the contrary it can be the beginning of something different: a new élan, a new resilience. For instance it creates new choices: contrasting regions -rural versus metropolitan-, or iconic and rejuvenated landscapes – viz. the German IBA³ Emscher Park in the Ruhr region, or a new economy –viz. the *slow food* economy in Toscana greatly befitting the spatial quality of the region. Or it reconciles a new quality of life: organic growth, a balanced architecture, urban agriculture and *slow living*: 'go *avant-garde* into a slow-village movement'. Energy conservation as part of a *bio based economy*, beneficial for *people* as well as the *planet* and *profit*, makes sense when one has to economise.

Identifying one's opportunities is incredibly important as is sustained and multi-annual community and stakeholders engagement, viz. the German IBA Saxony-Anhalt.⁴ It might take one or more decennia to reinvigorate shrinking or shrunken communities but it's worth the effort as can be seen in the south-east of The Netherlands, the Parkstad Limburg region (Parkstad = Parkcity).

2. History of Parkstad Limburg

Parkstad Limburg embraces the former eastern coalmining district in the south-east of the Netherlands, bordering Germany and Belgium. The landscape shows soft rolling Aeolian-loess hills with originally dispersed farms, castles and hamlets, cut by valleys, brooks and small rivers. For centuries, this rural region was the plaything of foreign powers' strategic interests with nowadays consequences still visible and tangible. The period of coalmining (1900-1965/1975) brought unprecedented prosperity and growth (Facts & Figures, fig. 1), in-migration from all over Europe, authentic mine colonies next to haphazard urban texture and a very intricate and strong social structure –but also dependency on the mine owner (jobs, housing) and the local priest (knowledge).⁵

The closing of the mines (1965-1975) inflicted a tsunami of unemployment: 75.000 jobs were lost. It is still felt today despite the national and European recovery programme ‘Green for Black’ (1970-1980).⁶ This concerted programme truly enough yielded a better labour market and more employment but also a second wave of haphazard urbanisation –chaotic as every municipality pursued its individual goals (fig. 1). It also meant the merciless destruction of the heritage of the mine-industry and the loss of extensive green urban fringes.

In spite of the efforts the region did not overcome the economic depression. From the nineties on the situation was further aggravated by a dwindling and ageing population –many of the young and able people leaving, birth-rates low and budgetary constraints tight as less funding flows into the cities budgets. Rebalancing is not yet in sight. People proud to have worked in the mines, the so called ‘koelepieten’⁷, lost hope a long time ago.

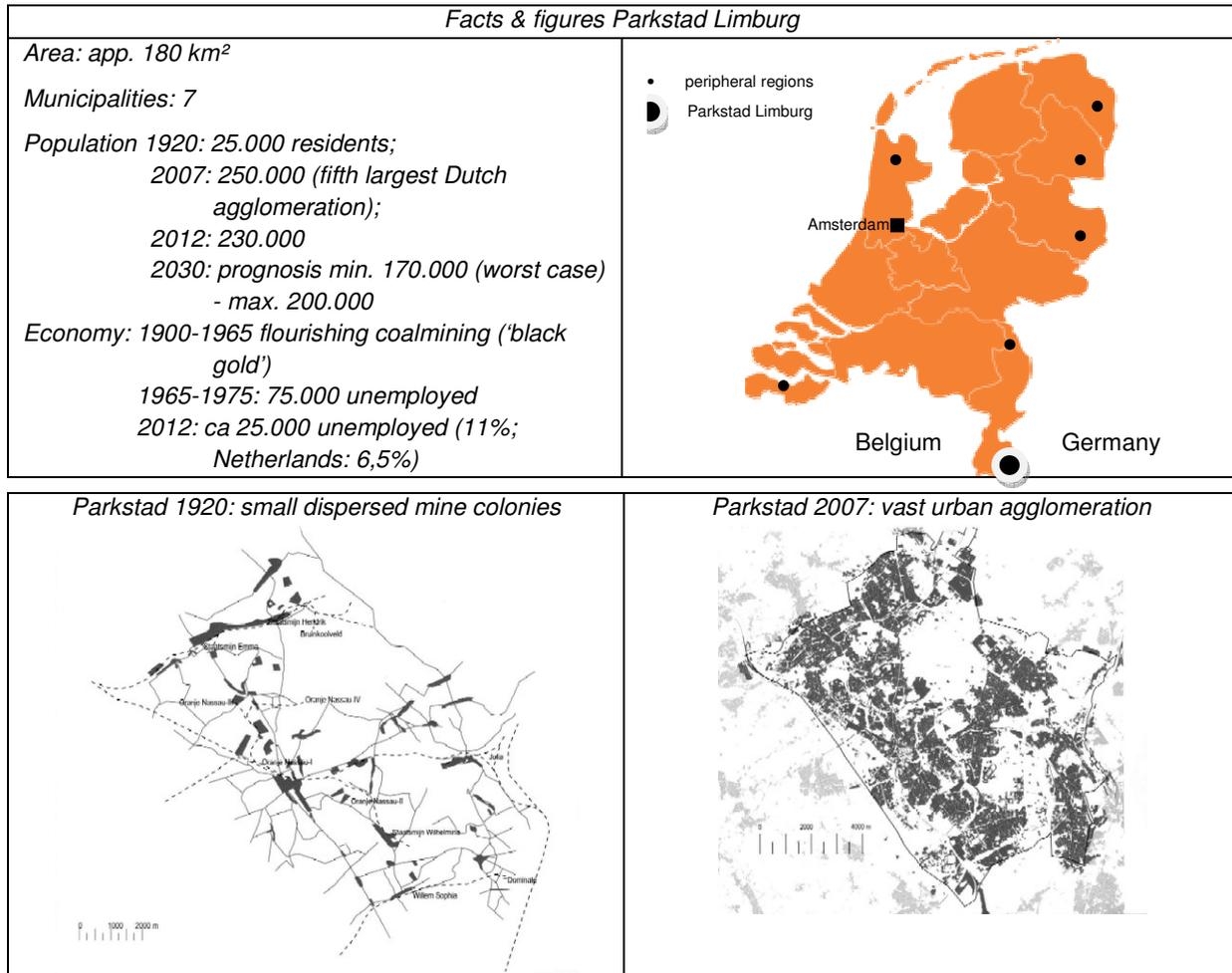


Fig. 1

3. Coalition of the willing

In 2003 a group of local captains of industry pressed the local politicians for a concerted action: ‘There is no more time to lose!’.⁸ December 2005 seven municipalities⁹ decided upon a close co-operation –the Parkstad Limburg region was born: *a coalition of the willing*. Their first aim and foremost overriding objective was to tackle the (bad) economic situation as ‘the inhabitants of the region deserve a better perspective and a safe income’. It was closely followed by the identity-mantra ‘make use of the inherent qualities of the region’ important for the strategies of perception.

However the Parkstad Council had no ready-made solutions available to the Parkstad problems, it was a virtually uncharted territory in The Netherlands. So both strategy and best practices had to be invented from scratch –a massive project.

4. Parkstad Laboratory: ‘what works counts’

The Parkstad region became a ‘laboratory’ creating and testing new strategies, scenarios and policies as well as instruments and toolboxes specifically tailored to this situation of structural changes. Technical surveys were followed by plans and projects, by burden-sharing; piecemeal shared budgets were put together and decided upon etc. Some instruments included so called ‘unorthodox’ measures as the combination of economic decline and a shrinking population had to be tackled in unconventional ways -sometimes by disobeying official rules... As was said ‘success is more important than democratic legitimacy. –what works counts’.¹⁰

5. Reinventing *good governance*: consensus, participation & mental switch

It was evident that technical fixes alone were not enough. The commitment and cooperation between seven autonomous municipalities deeply divided by historic events and set apart by the imminent threat of a municipal fusion was essential. Granting, giving and taking, became a *condition sine qua non*. Much time was needed to avoid falling prey to hurried, political posturing as well as the destructive Calimero effect between the one big city (Heerlen) and six smaller ones.

The different working constellations and alliances with the business community and the civic institutions also required a boost in mutual confidence and a change in the culture of communication & public relations as well as in power-sharing: who is taking the lead, who decides. Many multi-coloured coalitions and alliances were build, codes of conduct for all sides developed, old frictions set aside. More than once mediation of conflicts and values was needed.

A third important group were the residents, many weary by too long a period without a perspective. Quite a few families had a record of three generations stuck to unemployment benefits, an antidote for one’s sense of self-worth. The objective ‘to make people want to act’ (mental switch) was not achieved itself and the self-motivation was not implemented itself. A wakeup call became urgent and was heralded by the Parkstad Council in 2011 by the kick off of an IBA. This IBA, like the Sachsen-Anhalt one, focuses on energising the citizens in Parkstad to create entrepreneurship (jobs), ambition, self-confidence and innovative ideas that give an impulse to the quality of living and working in the Parkstad region. People are addressed as potential stakeholders and not just as those affected by planning -new forms of cooperation and new stakeholder alliances are indispensable, especially in informal planning, which is typical of urban redevelopment.¹¹

The challenge of commitment and cooperation between all parties was a fundamental one, in one word ‘reinventing’ *good governance*.

6. Vision and strategy

The awareness grew that a comprehensive and integrated vision and strategy was needed encompassing employment, housing, infrastructure, amenities, retail and leisure etc. as the multifaceted decline affected all sectors. All programmes were in need of a coherent adaptation, transformation and restructuring as well honouring the paramount decision of the

Parkstad Council to choose quality of life and strengthening the identity of the region and its selling points, the beautiful landscape/nature, historic and authentic mine colonies etc.¹² A strategic spatial –economic perspective had to bond all upcoming ideas and initiatives. The Parkstad Council knew it would take time to implement such a perspective –maybe decades. So they didn't want a rigid template ('blueprint') probably out-dated within a short period but asked for a set of principles ('conscience') to guide future opportunities and dynamics. It needed small steps not cast in stone and useful for both the fat years and lean years ahead. The Council also requested some freedom for the individual municipalities to act on the local level. It was understood that the large and complicated regional projects needed a joint effort. A small professional and high quality regional office (Parkstad bureau) was set up to guide and coordinate the inter-municipal working groups, to prepare the policy and decision-making for both the Parkstad Council and the municipal Councils and act upon it.

7. Concerted action, major tasks and challenges

In a concerted action the initial situation of the region was thoroughly explored: its major assets, problems, alternative solutions, distribution of tasks and its challenges as well as opportunities regarding economy, spatial planning, housing, quality of life, nature and landscape, cultural heritage, etc. Along the way a myriad of questions appeared: what (limited) resources do we have, what investments are crucial to ensure the resilience of the region and its inhabitants, what should be implemented first (priorities, multiplier effects) and what follows and who can invest, when and how much? Where do authorities come in (top down or as facilitators?), where do trade and industry and their CEO's take the initiative, where the historically social-sturdy local communities and their citizen-stakeholders (bottom up movement).

The connection with nearby (rival) cities like Maastricht and the German and Belgium regions too had to be dealt with: Parkstad is not an island, tuning in with nearby big agglomerations like German Aachen (*Städteregion*, 800.000 residents) is necessary and can be fruitful. As it is said 'the future of Parkstad is cross border'.¹³

8. Strategic spatial –economic Development Perspective: core themes

In the Development Perspective the spatial – economic strategy for the region was explicated into so called pillars (icons fig. 2) and principles of restructuring (icons fig. 3).

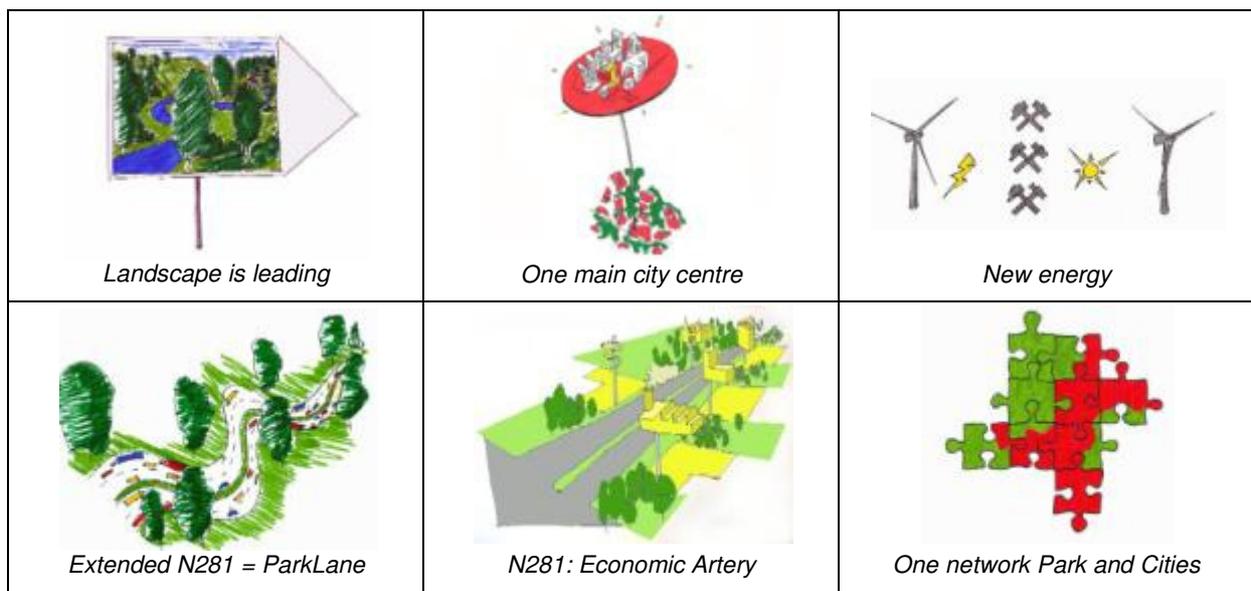


Fig.2: Pillars

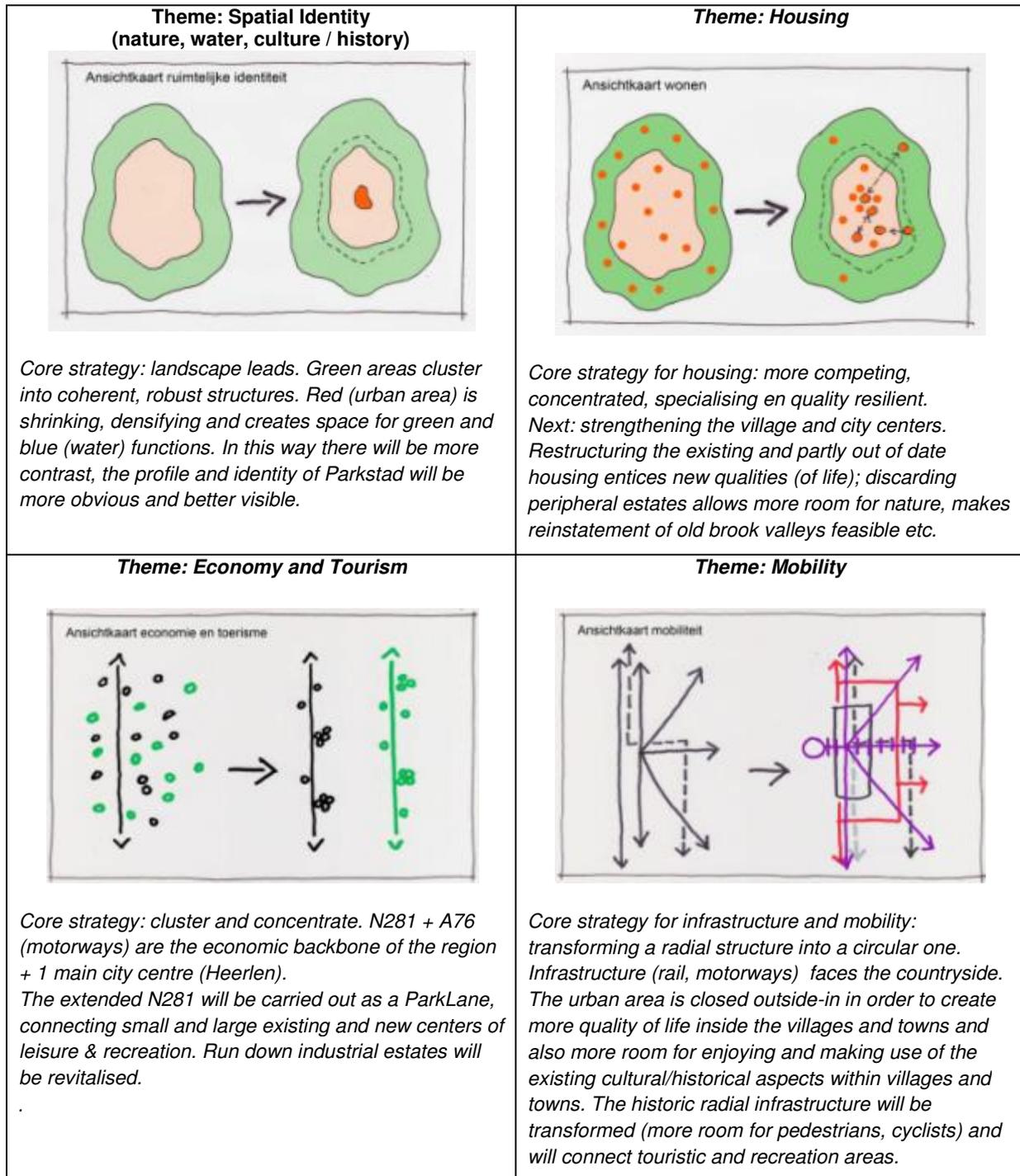


Fig. 3: Principles of restructuring

Pillars and principles are the ‘conscience’, all future initiatives will be put to the test with these interacting ‘doctrines’. Above pillars and principles is the omnipotent umbrella of ‘sweet and sour to be evenly shared’, i.e. fairly distributing the gains and losses of transformation and willing to make compromises in the process. Shrinking often means redistribution –and redistribution means ‘negotiation’.

Note: citizens do understand icons and/or (comic) strips sometimes better than complex maps or tedious long policy reports –so if it helps develop a strong visual language. Storytelling is another useful instrument as are social media.¹⁴

9. Parkstad on its way

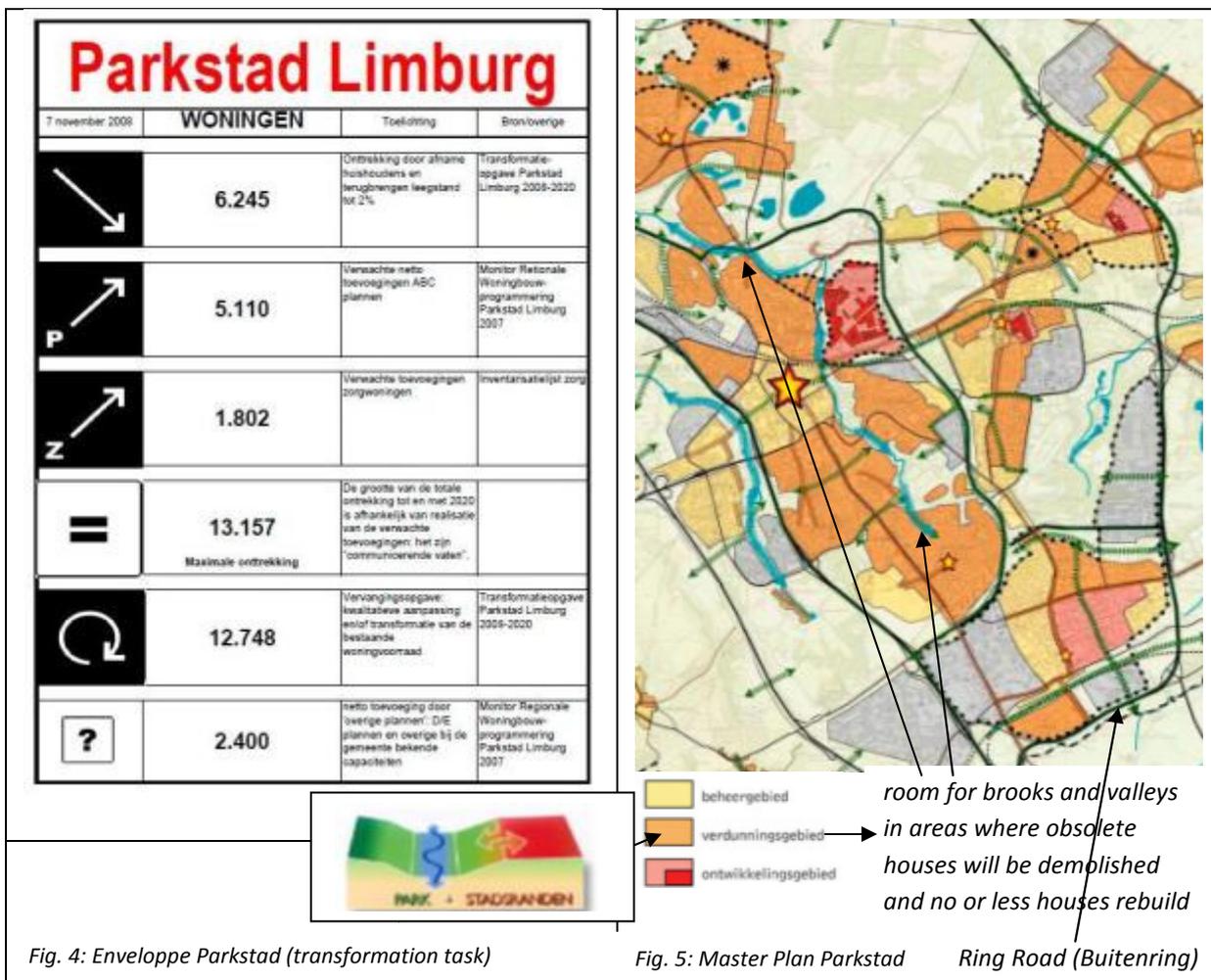
The Development Perspective was laid down in maps, schemes, clarifications and instructions. Connected is a roadmap showing:

- what issues are the responsibility of the local municipalities including a realistic timetable (e.g. small local developments, services & maintenance)? If wanted/needed every municipality can ask for assistance from the regional bureau experts;
- what issues need extensive cooperation between neighbouring municipalities, as well as the help of the experts of the regional bureau (2008: 6 large inter-municipal development projects and restructuring zones)?
- In particular, for which pilot projects is the regional bureau accountable, and the municipalities in assisting and monitoring them (e.g. regional infrastructure –train, motorways, trans-border activities).

Next to the list of projects annual and multi-year programmes coupled with budgets were drafted, to be reviewed yearly.

10. Plans and projects: 2 examples of mutual-gains

Given the nature of this case study only a fraction of the plans and projects the region and its partners developed, tested and made to measure, can be shown. The focus here will be on 2 examples regarding the quality of life and the green identity incorporating the relevant 'pillars' and 'principles'.



Take the case of the many former brooks and ecologically rich valleys/ That past era disappeared in the wake of vast and often ruthless urbanisation robbing the region of its green/blue *genius loci* and identity.

Too much town for too few residents was what a thorough survey and prognosis (2007) showed: a large surplus of houses, many not meeting present standards, as well as a high vacancy rate. The surplus amounted to some 13,000 houses (of a total of some 114,500 [2007])¹⁵ to be earmarked for demolition between 2007-2020 and a mere 6500 new houses were built in that same period (instead of 20,000 new houses foreseen in municipal plans ...).¹⁶ Complicating factor: 30-40% of this obsolete housing stock is private property.

After several heated public debates it was decided that, provided there is enough money available to compensate the owners, the obsolete and non-historic hot-spots would be demolished as they do not meet present standards and often downgrade their neighbourhoods socially, physically and/or financially (lowering values of nearby estates).¹⁷ It follows that if such a neighbourhood coincides with a place where nature and hydrological system are squeezed and dented by past urbanisation, the old bygone green-blue 'connections', brooks and valleys, will be reinstated in full glory and given back their authentic and historic identity (*genius loci*).

The same formula applies for the out of date peripheral housing estates from the nineteen sixties, most property of housing cooperatives: thwarted by high vacancy rates. They would be demolished too and the earth given back to the surrounding landscape and nature (fig. 3 Theme: Housing).

Where buildings are removed, landscape modules are inserted according to the opportunities that arise, gradually generating the building blocks of a future urban landscape. This way the multifaceted desire for a life on the outskirts of town can be realised in inner-city locations.



Caumer Brook



Brunssum heather-covered moors near German border

In the case of the new outer Ring Road (Buitenring) several planning principles were successfully combined creating a cascade effect of added value:

1. building a 'green' Park Lane (fig. 2) deviates the present heavy through traffic from the villages, thus
2. enabling the restoration of the historic, pedestrian friendly profiles of local roads, and
3. giving the citizens more quality of life: less noise, stench, more room for biking, walking and tree planting,

and also:

4. enabling to remove old dilapidated industrial estates on the track of the ParkLane and
5. giving better access to some viable industrial and leisure areas, impetus for new investments,

as well as:

6. creating the opportunity honouring the principle of 'green for red' (according to Dutch EIA) to connect the Parkstad nature reserves with the nearby German national park by calling upon the compensation acres,
7. the result: a vast trans-border nature area -more than the sum of its parts.

11. Lessons learned: looking back and looking forward

The closing of the coalmines in 1965-1970 was a horror-scenario for the people of the Parkstad region. The following shrinking of the population, the loss of jobs and the declining economy were severe blows hard to overcome. Every shrinking region will have its own specific story and fitting solutions, nevertheless what can one learn from the Parkstad experience?

- A strong (regional) leader(s) is urgently needed, one who wants to take on this demanding task. It's all about audacity, passion, charisma, optimism and political ingenuity. Even then not everything will be plain sailing but at least things start 'moving' and 'work can be in progress'.
- It is recommended that central government shows compassion from the beginning –a 'wait and see' attitude (or worse 'it's your own fault') will damage citizens' trust.¹⁸
- As for (local) authorities: in periods of growth and prosperity (high tide) 'sharing the abundance' is a less brittle and strife-ridden subject than in times of economic stagnation and decline. A low tide induces 'fighting for the bacon'. Sharing 'sweet and sour' in a low tide period asks a lot from previous autonomous municipalities (as in Parkstad), but cooperation and acting *in unison* is inevitable as there is always the danger of a third party catching the most wanted prey.
- Cooperation, exchanging knowledge and expertise can ease the burden of the workload.¹⁹
- By cooperating and networking, the shrinking towns and villages can accumulate 'borrowed size' and a sizeable amount of 'social capital'.
- Don't wait too long to get the residents activated and involved; authorities need residents' support (pioneers of urban redevelopment) and their self-confidence (social capital).
- Note that citizens understand icons and/or (comic) strips sometimes better than (complex) maps or (tedious long) reports/policies; so it helps to develop a strong visual language and to use social media. Children are very smart in expressing the essence –this raises new generations of understanding as well.
- Best practices are an excellent instrument to show that 'things happen': Yes We Can! One should celebrate these moments beyond the cosy circle of politicians and tech-nerds.
- Leadership and vision, self-confidence and a 'can do' attitude are of utmost importance.
- The aspect of 'urgency' and 'focus' on matching problems with solutions in a fragile situation are important. As is the 'framing of the message', it is essential to get residents energised and involved in their own bright future.²⁰
- Seeking to manage development without growth requires flexible concepts and dynamic implementation strategies, if needed small steps not cast in stone.

And last but not least: the structural tuning of complex problems in a long timeframe asks for steady and long term cooperation. That cooperation can be a happy marriage if it's *con amore*. Things then can happen. A painful foot-dragging relation has less output. Nobody wants to be part of a tragedy, everybody wants to father a success!

Notes

¹ The case study is based on the article 'Regionale strategieën Parkstad Limburg: een nieuwe toekomst!' by HelenaChaja Heyning et al. (2007). In 2007 the author was in charge of the Parkstad Limburg 'Infrastructure & Regional Planning' programme and task force.

² Bloomberg M. (mayor New York) (June 11, 2013), The City's Long-Term Plan to Prepare for the Impacts of Climate Change

³ IBA: Internationale BauAusstellung (International Building Exhibition)

⁴ International Building Exhibition Urban Redevelopment Saxony-Anhalt (2010), Less Is Future: 19 Cities – 19 Themes.

⁵ There is an old saying of the local priest to the owner of the coalmine: 'If you keep them poor I'll keep them ignorant'.

⁶ Perspectievennota voor Zuid Limburg (1977), European Fund for Regional Development.

⁷



A group of proud 'koelepieten'

⁸ Kerngroep Structuurvisie Parkstad Limburg (2003), Op hete kolen – De beloftes voor 2030.

⁹ Brunssum, Heerlen, Kerkrade, Landgraaf, Onderbanken, Simpelveld, Voerendaal –to be followed by Nuth.

¹⁰ Gresel, T. (mayor Heerlen) (2007), Staatscourant August 3d 2007.

¹¹ International Building Exhibition Urban Redevelopment Saxony-Anhalt (2010), Less Is Future: 19 Cities – 19 Themes. Meanwhile the IBA Parkstad Limburg applies for 3 themes: FlexibleCity, EnergyCity and RecycleCity.

¹² TAB Taken Landschapsplanning bv + afa architecturfabrik-aachen Bisscheroux Architect b.i. (2004), Identiteit van Parkstad Limburg.

¹³ Commissie Hermans (2007), De toekomst van Limburg ligt over de grens.

¹⁴ Every day the Amsterdam City Lab sends a promising message to its followers: innovative ideas, things to be seen, etc.

¹⁵ E,til (2009), Sociaal-economische doelgroep en kernvoorraad Parkstad Limburg.

¹⁶ As can be expected numbers change over the years: a recent prognosis (Stec [2013], Financiële arrangementen voor de demografische transitie) shows that 20.000 houses have to be demolished in the period 2013-2030 as the population will shrink 15%.

¹⁷ A draft decision is being prepared (2013): building a new home has to be matched by pulling down an obsolete one.

¹⁸ Note: compassion can be manifold, f.e. 'help in the laboratory', specific legislation rising the occasion or a financial contribution ('seed money')/subsidy to overcome the situation and/or create a multiplier effect. In the period 1970-1990 there were all kinds of state subsidies for urban renewal and regeneration but not for housing demolition in shrinking regions.

¹⁹ The Parkstad bureau and its interdisciplinary work- and decision groups in which civil servants, aldermen of all municipalities and sometimes private enterprises participate, are very effective.

²⁰ See also the heralding in 2011 of the IBA Parkstad Limburg.

Affordable Housing Opportunities in Small Indian Cities- A Case study of Industrial Migrant

Author: Kana Ram¹ National Institute of Urban Affairs, New Delhi, India

Abstract

Houses are the basic human need. It has been one of the priorities of the Government of India (GOI) right from the First Five Year Plan till date. Government has provided various fiscal incentives to promote housing on both, the demand and supply side. Since independence, a large number of schemes have been launched but target of affordable housing for all has not been achieved. What can be done to make housing more affordable? For the owner-occupied sector, lack of affordability is a problem for Lower Income Groups (LIG) and Middle Income Group (MIG) in most of the cities of the country. However, this paper shows that excessive affordability is not a problem in small cities unlike metropolitan's cities. Till now the main concerns are metropolitan's cities and this paper argue that small cities are often neglected with respected to affordable housing. If we ignore our fast growing small cities now, which are potential metropolitan cities, then the future may become more critical in terms of providing affordable housing to inhabitants of these cities. The Government is concern on metropolitan cities as compared to small cities, which has to be change for a balanced and sustainable future urban development.

¹ Kana Ram (kgodha@gmail.com) is a Research Associate at National Institute of Urban Affairs, New Delhi, India

Introduction:

The growing concern over the affordability of housing among the people arises from two factors. First, housing is the single largest expenditure item in the budgets of most families and individuals. The average households allocate roughly one-quarter of their income to housing, while poor households commonly devote half of their incomes. These high proportions suggest that small percentage changes in housing prices and rents will have large impacts on housing consumption as well as welfare of household. Second, the recent trends indicate that in many urban areas have experienced unprecedented price hike which further makes the dream of an affordable house beyond the reach of common people.

In India, affordable housing is raised as a major policy concern of the government in "National Housing and Habitat Policy" (2007), but housing planners are apprehensive with the rhetoric of "affordability," which jumble together in a single term a number of disparate issues like the distribution of housing, prices, quality, income, purchasing power of households, and their knack to scrounge money from housing finance institution affecting housing markets severely. It's further affecting the supply of new or refurbished housing to the beneficiary resulting in a choice and cost mismatch. These complex issues raise difficulties in interpreting basic facts about housing affordability. For example, the rapid rise in the price of homes clearly made homeownership a distant dream to many buyers, but it has also greatly reduced the financial costs of home-ownership to a much larger group of existing landlords, by providing substantial capital gains. Among buyers, the large share of income devoted to housing surely reflects their voluntary consumption choices, as compared to the consumption of a publicly determined minimum quality and quantity of housing, for other consumers in this sector. However, the poor group of households would choose a lower quality of housing given their opportunities; one might conclude that the incomes of the poorest households are grossly insufficient to afford the socially imposed minimum standard.

Affordable Housing: Affordable housing or low cost housing is a widely discussed issue in India today. This generally refers to cost effective housing, based on low cost technology that ensures similar quality and durability; as compared to more commonly used technologies. In India, affordable housing policy is primarily designed to provide low cost housing to lower middle income groups, lower income groups and economically weaker sections of the society. The involvement of government authority is likely to be prominent. As per the latest definition, households having an annual income of less than Rs 1.5 lakh per annum are termed as LIG and hence households belonging to EWS will be further down in terms of income classification.

The concept of affordable housing, in contrast to low cost housing is applicable across all income categories. The affordability of a household in a given location is an interactive outcome of the house price, household income, spending and saving behaviour and other demographic factors like size of the household. It is recognized that affordability is relative to geographical area, time and income category. Thus defining affordable housing continues to be a challenge for real estate operators, policy makers and planners of the country.

In developed country like the US, a frequently used norm for affordability is a residential unit costing 30% or less of a household's gross annual income. In sharp contrast the Housing Development Finance Corporation Limited (HDFC), the largest lender in the housing finance market in India, considers five times of annual income as the maximum affordability of a households. For example a households earning Rs. 3 lakh a year, should afford a house cost at most Rs. 15 Lakh.

Even though there is no concurrence on any standard affordability norm in India, the fact that there is a pressing need to identify the affordability of various income groups in different cities is acknowledged by major stake holders in India's real estate industry. Given that, between 1991 and 2001, 79% of the new jobs were generated in urban areas, and the urban population in India is growing at a brisk pace, the focus of affordable housing is expected to be more urban centric.

Affordable House for Whom?

The household income is the major criteria to measure affordability; the affordable housing is not restricted to the lower middle income class, but spreads across levels like LIG or EWS. However, in India, affordable housing is perceived to be related to low and lower middle income households and relates to the affordability of the households. This shows that the maximum demand for affordable housing is for LIG and lower middle income groups of the society.

Table 1: Distribution of Housing Shortage among economic category - 2012

S.No.	Category	Distribution of Housing Shortage among different economic categories as on 2012	
		No. (In Millions)	In Percentage
01	EWS	10.55	56.17
02	LIG	7.41	39.45
03	MIG and above	0.82	4.36
04	Total	18.78	100.00

Source: Report of the Technical Group on Urban Housing Shortage (TG-12), Ministry of Housing and Urban Poverty Alleviation, Government of India

Table 1 illustrates estimated housing shortage in India as on 2012. In India in spite of the quantum leap in the housing stock in the country, the housing shortage has also been increasing. According to the Report of the Technical Group (12th Five Year Plan: 2012-17) on Estimation of Urban Housing Shortage, the total urban housing shortage in the country in 2002 was 18.78 million dwelling units and 95 percent of this shortage pertains to the economically weaker sections and the lower income groups of the society.

The shortage of affordable housing is getting worse instead of better. The country's urban population of 285 million has multiplied by five over the last 50 years. It is projected that it will continue to increase at this fast pace, and that 50 per cent of all Indians will be living in urban areas by the end of the next three decades. So, if the shortage for housing for the lower income segment stands at 25 million today and there is no increase in the pace of supply of affordable housing launches, what will this figure look like in 30 years?²

A Case study of Industrial Migrant: A small town Bhilwara

Bhilwara is the 'Textile City of India' and one of the most industrialised town of Rajasthan. The textile industry is the back-bone of the city's economy. However, textile industry is the second largest employer in the organized and unorganised sector after agriculture. Over the past few decades Bhilwara has emerged as Rajasthan's premier textile destination. It is currently India's leading Polyester-Viscose suiting and yarn exporter. Bhilwara is a demographically diverse city and one of the fastest growing cities of the state. The favourable weather conditions and historical development have facilitated investment in the city. Bhilwara is the seventh largest city of State having a population of 280185 (Census-2001). The growth rate of the city in last three decade is more than 50%.

The textiles sector, being the prime economic driver of the city, is directly responsible for the increase in housing affordability among the city's various demographic segments. Over the past decade there has been a paradigm shift in the attitude of home buyers. The economic growth has resulted in an increase in the city's per capita income, promoting fast development that has changed the home buyer's outlook. The traditional conservative consumer mindset has been replaced by a desire for instant gentrification, resulting into frantic activities in housing market. Home buyers in Bhilwara represent a mix of end users and investors, whereas previously the former constituted the majority of housing demand.

Demand perspective: A primary survey of tenant households was undertaken by the author in 2011 in Bhilwara city. According to this survey tenant households, who are considered to be the most potential buyers of residential houses, indicate certain household characteristics. It has been observed that most of the sample households are nuclear in

² <http://www.thehindu.com/business/Industry/a-growth-engine-of-the-future/article4912425.ece>

nature, with rest belonging to the joint family type, with an average household size of 5.3. Another important issue worth mentioning is that more than one third of the respondents are migrants and it highlights active participation of migrants in the process of house purchase. Among the households surveyed, 92% represents the migratory population of the region. Of this, nearly 92% of the households have migrated to Bhilwara for job in textile industries and 8% for other reasons. The average number of years for which a migrant household has been living in the Bhilwara is about 7 to 8 years.

Table 2: Distributions of Sampled Households According Types of Occupation

S. No	Types of works	% of Respondents
1	Self employed	14.4
2	Government service	7.8
3	Labour	10.0
4	Vendor	1.1
5	Private service (Factory)	63.3
6	Others	3.3

Source: Primary Survey, 2011

Table 2 illustrates the distribution of the sampled households according to the type of occupations with a majority of 63.3% of the households working in textiles industries and spinning mills in Bhilwara, while 14.4% are self employed, 10% are labour category and 7.8% are other major categories of occupation.

Table 3: Distribution of Sampled Households According to Total Annual Income

Annual Income of Households	% (Sampled Households)
< Rs 39600	12
Rs 39601 to 87600	59
Rs 87601 to 174000	26
> Rs 174000	3
Total	100

Source: Primary Survey, 2011

Table 3 shows the distribution of sampled households according to their total annual income. 59% of the sample reported to have an annual household's income in the range of Rs 39,601 to 87,600 and 26% between Rs 87,601 to 1,74,000. 12% of the sample households reported to have an annual total income, less than Rs 39600, which comes under economically weaker section of the society. Only 3% of the sampled households recorded

Rs 1.74 lakh and higher annual income. This means that most of the workers, who are working in textiles and spinning industries, are earning less than Rs 10000 per month.

Table 4: Percentage Distribution of Current Residence Type based on Annual Income

Annual Income of Households	Single room	Room With kitchen	1 BHK	2 BHK	3 BHK	> 4 BHK
< Rs 39600	5	1	1	0	0	0
Rs 39601 to 87600	36	13	10	3	1	2
Rs 87601 to 174000	6	5	1	7	0	4
> Rs 174000	1	1	0	2	1	0
Total	48	20	12	12	2	6

Source: Primary Survey, 2011

Table 4 indicates the distribution of the sampled households according to current residence types and annual incomes of the family. The table indicates that majority of residents (48%) are staying in single room. As far as the house types and incomes are concerned, out of 48%, 36% of the sampled households are staying in one room who are earning Rs 39600 to 87600 annually. 20% of the households are residing in one room kitchen type of accommodation. The people who are living in 1BHK or 2 BHK are generally the owners of the house. The households which are earning more than Rs 10,000 per month generally inhabit in 2 BHK or 3BHK types residential houses.

Table 5: Distribution of Sampled Households (Owner) According to Rental Value of Houses

Rental Value of Households	1 Room Kitchen	1 BHK	2 BHK	3 BHK	4 BHK & above
< Rs 1000	0%	0%	3%	0%	0%
Rs 1001 to 2000	9%	12%	21%	3%	6%
Rs 2001 to 3000	0%	0%	9%	9%	6%
> Rs 3000	0%	0%	3%	6%	15%

Source: Primary Survey, 2011

Table 5 depicts a distribution of sampled owner households according to the rental value of their houses. The average monthly rentals values are vary from Rs 1000 to 3000. The majority of the sample lies in Rs 1000 to 2000 per month rental values of 2BHK and more than Rs 3000 for 4BHK. Which suggests that most of the houses having 2 or 3 tenets. The average rent is Rs 700 to 800 and more than 50% sampled stick to single room accommodation.

Table 6: Distribution of Sampled Households (Rental) According to Rent of House

Paid Rent	1 Room	1 Room with Kitchen	1 BHK	2 BHK
< Rs 500	22%	1%	7%	0
Rs 501- 750	24%	9%	0	0
Rs 751- 1000	10%	7%	0	0
> Rs 1000	6%	7%	3%	1%

Source: Primary Survey, 2011

Table 6 illustrates a distribution of sampled rental households according to rent and types of houses. It is observed that in Rs 500 to 1000 rent category are around 62% residing in single room house and 24% reside in 1Room with kitchen.

Buyer's Preferences: A prospective buyer's purchase decision is influenced by a host of factors ranging from price to location. Due to the growing awareness among consumers, choice of facilities and amenities are also found to be important determinants. To start with, the survey has gauged the budgets of households who are willing to purchase a house in the near future. In addition, the household survey has also brought out the factors influencing preferences of potential buyers pertaining to locations and projects.

In Bhilwara, the average budget of the buyers varies between Rs 1500 to 4500 per month and has increased with the higher income of household.

Table 7: Distribution of Sampled Household According to Average Preferred Budget & Types of Houses

Types/Budget	Rs < 1500	Rs 1501- 3000	Rs 3001-4500	> Rs 4500
1 BHK	11%	4%	0	0
2 BHK	9%	45%	12%	0
3 BHK	0	0	16%	4%
Total %	20%	49%	28%	4%

Source: Primary Survey, 2011

Table 7 depicts the distribution of sampled households according to their average preferred budget and type of houses. Generally for the owner the prices and size of the houses are important factors to determine when they are making a purchase decision. It was observed earlier in the table that most of the tenants (50%) currently reside in single room, but here 66% of the sampled preferred 2 BHK as ideal house for them. 49% of the households wanted to invest Rs 1500 to 3000 as average budget or EMI for houses per month.

Table 8: Distribution of Sampled Households According to Their Preferences of Location

Respondent	Where People Want to Buy a House			
	Near to work place	Same area where I am living	Anywhere in the city where I can afford to buy a house	Place having proper basic services
Yes	16	8	49	0
% of Respondent	21.9	11.0	67.1	0.0

Source: Primary Survey, 2011

Table 8 indicates the distribution of sampled households according to their preferences of location for housing. It is observed that the price or affordability of the houses attract most of the households. The nearness to work place is next important factor of attraction to the households for new houses. On the other hand the presence of basic services holds the least weightage for decision of potential buyers of houses in Bhilwara. The majority of households were interested in purchasing affordable houses anywhere in the city and few prefer same area where they are living.

Supply Perspective: In the recent past, the residential market in Bhilwara witnessed hectic real estate activity, aided by strong demand from the textile industries workers. The major real estate companies like Ansal Group, Manglam, DLF, Essel Group and some local developers are investing in residential market into the city.

In the last few decades, estimated population growth and inward migration is more or less 50%. In the last decade the proportion of the migrant population in total population is 38.63%, which assured steady demand for housing unit in the city. Thus, the housing sector in Bhilwara is primarily at the end user driven.

There are some opinions and apprehensions expressed by the one of the developers & Rajasthan Housing Board Bhilwara (RHB Bhilwara) on the affordable housing market in Bhilwara.

House Size: According to the household survey, the EWS, LIG and MIG have their own choice with cost variation. The maximum affordable housing price for EWS of Bhilwara is Rs 280000, and for LIG, Rs 350000 and for MIG, Rs 420000. The industrial workers are the most targeted customers.

Availability of Land: In term of land supply, considering the cost of land and its availability within the city limits (BMC), developers and RHB Bhilwara, have lots of possibility of the affordable housing schemes to the city. The major areas are Shri Ram Nagar, Azad Nagar,

Jawahar Nagar, labour colony, Chandra Shekhar Azad Nagar, Biliya where the cost is around Rs 300 to 500/Sq. Ft. The land rate in the city is varies from Rs 300 to 1200/Sq. Ft. (Approx)

Cost of Construction: The cost of construction is around Rs 500/Sq. Ft. in Bhilwara.

Affordable Housing in Bhilwara: Now a day's in urban area of Bhilwara housing affordability is a serious concern for inhabitants of Bhilwara, Being the textile hub and one of the most prominent city of state for employment generation, authority ought to address the housing crisis adequately. The rapid urbanization and population influx increased the problem of the housing affordability in the city in many fold. In urban area the lower income and middle income group always had difficulty in purchasing a residential property within the city but it is the fact that despite being in comparison to Mumbai, Delhi, Hyderabad, and Jaipur where the property prices are considered to be highest in the country, Bhilwara is relatively more affordable for purchasing a house. However, it has larger areas with huge land area available for housing development, at various locations as options for the residents of the city to fulfil their housing needs.

Bhilwara revealed a number of interesting facts during the households survey carried out in order to ascertain the affordability of the various income groups at city level. The results of the household survey were used to compute affordability pertaining to various locations in the city.

Table 9 depicts in details of the maximum affordable EMI of households of various income levels. The EMI for EWS is Rs 984/months; LIG is Rs 984 to 2190 and for MIG is Rs 2190 to 4350/months is calculated. There is a wide gap between the EWS and MIG groups.

Table 9: Affordability in Bhilwara

	EWS	LIG	MIG	HIG
Households income (Per Annum)	< Rs 39600	Rs 39601-87600	Rs 87601-174000	> Rs 174000
Maximum EMI for Migrants/ Month (Rs)	984	984 - 2190	2190 - 4350	> 4350
Affordable housing Price (Rs) (Calculation according to HDFC Definition of Affordable Housing)	201960	201961-446760	446760 - 887400	> 887400
Preferred Plot Size for House (Sq. Ft.)	400	500	600	
Price (Rs350/Sq. Ft.)	350	350	350	
Total Plot Value (Rs)	140000	175000	210000	
Total Built up Area (70% of Plot Area)	280	350	420	
Construction Cost (Rs 500 sq. Ft.)	140000	175000	210000	
Affordable House/property Value (Rs)	280000	350000	420000	
Maximum Loan eligibility (Rs.) (9% interest rate ,for 15 year loan tenure)	224000	280000	336000	
Buyers Own Contribution (Rs.) (Assuming 80% loan)	56000	70000	84000	
Maximum EMI for Migrants (Rs)	1680	2100	2520	

Location Available considering preferred size and few residential Area	Shri Ram Nagar, Choti Harni, Badi Harni, Harijan Basti, Kanwa Khera Mangal Pura, Biliya	Azad Nagar, Labour colony, Bapu Nagar, Gandhi Nagar, Ambedkar Nagar, Laxmi Pura,	Chandra Shekhar Azad Nagar, Azad Nagar, Pratap Nagar, Jawahar Nagar Ram Dham Sanjay Colony	
--	---	--	--	--

Source: Primary Survey, 2011 and Calculated as per Assumption

The calculated affordable housing price for EWS is Rs 201960, LIG is Rs 201960 to 446760, and MIG is Rs 446760 to Rs 887400 and above Rs 887400 is for higher income groups of the city. This EMI figure for assumed houses was arrived at by considering the respondents stated affordable EMI with regards to their spending capacity. The resulting figure was then translated into the house price based on an assumed interest rate, Loan tenure and loan to value ratio. The house price is then converted to a per square feet rate assuming house size, assuming construction cost for 70% built up area and this conversion facilities comparisons with prevailing rate in different location in the city.

An interesting point that was inferred from the survey results was that the income groups of Rs 39600 and Rs 39601 to 87600 and Rs 87601 to 174000 preferred different sized unit for their housing needs. All income categories expressed area of their residential units in the range of 400 to 600 square feet across all income categories. While this allows the all income groups (EWS or LIG or MIG) to purchase a house with an average price of Rs 350/ square feet.

Meanwhile, the households especially those in the income category of Rs 39,600 per annum are willing to compromise on house size, and can only afford to buy a home in location like selected pockets of the outer region of the city, like Shri Ram Nagar, Choti Harni, Badi Harni, Harijan Basti, Kanwa Khera Mangal Pura etc. while the households in the slightly higher income category of Rs 39601 to 87600 can additionally afford a home in Azad Nagar, Labour colony, Bapu Nagar, Gandhi Nagar, Ambedkar Nagar and Laxmi Pura etc.

The MIG Households with slightly higher income of Rs 87600 to 174000 can additionally afford a home in Chandra Shekhar Azad Nagar, Azad Nagar, Pratap Nagar, Jawahar Nagar, Ram Dham and Sanjay Colony etc.

Conclusion: What should be done to make housing more affordable? For the owner-occupied sector, lack of affordability is a problem for EWS/LIG and MIG in most of the urban centre in the country. However, the study shows that in Bhilwara, the affordability is not a problem like other metropolitan cities of the country. Till now the main concerns are metropolitan's cities and this paper argue that small cities are often neglected with respected to affordable housing. If we ignore our fast growing small cities now, which are potential metropolitan cities, then the future may become more critical in terms of providing affordable housing to inhabitants of these cities.

The Government and the developers are emphasizing more on metropolitan areas where the saturation point has already been achieved and ignoring areas where it could have been more fruitful in realizing the dream of affordable housing for masses, with all the basic amenities with strong infrastructure. If that is done over a period of time, with gradual growth these under developed areas would turn into a metropolitan area in the future without having housing problem.

Most of the EWS/LIG and MIG category houses require the basic necessities for comfortable living which are more important in the present housing scenario. Affordable housing has become a top priority for developers. The majority of demand is coming from EWS/LIG and MIG sections of the society. The small and medium towns are an ideal destination for investment and purchase of property and will be highly affordable for the masses. Bhilwara provides all such scenarios where the concept of affordable housing can be realized in practical manner.

Bibliography

- Anthony D. (1969): "Housing the Urban Poor: The Economics of Various Strategies" The American Economic Review, Published by American Economic Association, Volume-59, pp-646-651
- Census of India-2001
- Deepak P, (2009): "Task force on Affordable Housing", by Ministry of Housing and poverty alleviation. Government of India
- Frans B. (1995): "Rental and Rent Free Housing as Coping Mechanisms in La Paz, Bolivia, Environment and Urbanization, Published by Sage Publication
- John R. M. (2004): "Housing Demand Coping Strategy and Selection Bias" Growth and Change, Published by Blackwell Publishing, Volume-35, pp-220-261
- Jeffrey I.R, Joseph J.S, Janet G.S., (1990): Affordable Housing and Municipal Choice, Land Economics, Vol. 66, Published by: University of Wisconsin Press
- Kang C. (1966): "Industrialization and Urban Housing in Communist China", The Journal of Asian Studies, Published by Association for Asian Studies, Volume-25,pp-381-396
- Mehta, M & Mehta, D. (1989): "Metropolitan Housing Market: Housing Supplies, Demand & Residential Behavior in Ahmedabad
- Morrison N. (2003): "Assessing the Need for Key-Worker Housing: Case Study of Cambridge", The Town Planning Review, Published by Liverpool University Press, Volume-74, pp-281-300
- Oberai A.S. (1987) Migration, Urbanization and Development
- Sheila Crowley (2006): The Affordable Housing Crisis: Residential Mobility of Poor Families and School Mobility of Poor Children, The Journal of Negro Education, Published by: Journal of Negro Education.
- Stephen K.M & Stephen M. & David J.G. (1986): "Shelter Strategies for the Urban Poor in Developing Countries", The World Bank Research Observer, Published by Oxford University Press, Volume- 1, pp-183-203
- Sulayman K & Saad A. (1999): Migrants' Strategies of Coping and Patterns of Accommodation in the Oil-Rich Gulf Societies: Evidence from the UAE, British Journal of Middle Eastern Studies, Published by: Taylor & Francis, Ltd, pp- 271-298
- Phatak, V. K. (1996): "Shelter Strategy for Bombay", in David, M.D. (ed.) Urban Explosion in Mumbai.pp-180-198

Neighborhood relationship measurement between newcomer and former inhabitants in sprawl areas of Bangkok Metropolitan Region: the case of Nonthaburi and Pathumthani province, Thailand

(Gated Housing Development impacts on neighbourhood relationship in sprawl area)

Siwaporn KLINMALAI, Kyoto University, Japan

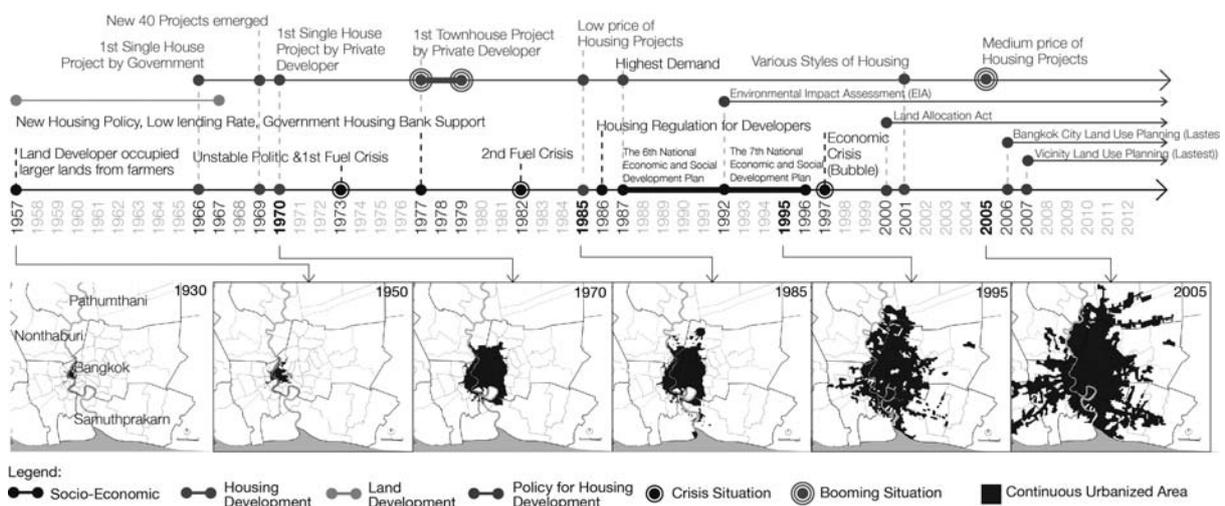
Kiyoko KANKI, Kyoto University, Japan

Bangkok Metropolitan Region (BMR) faced impact of sprawl situation spreading in large scale, and land use has rapidly transformed, changing from agriculture to urbanization and dose of new residential projects. This transformation conduces to livelihood problems between newcomer and former villagers. The study has conducted with site survey and questionnaire distribution. After empirical study and review literature in study area in Nonthaburi and Pathumthani was investigated, the positive and negative impact of different land use transformation was revealed. The results can propose idea to improve new housing project in the future.

1. Introduction

1.1 Research background and objective

Bangkok city has been coped with high economic activities and migration of rural population because of rapid urbanization. In order to reduce impact of speedy population growth and distribute urban development from city center, the 6th and 7th National Economic and Social Development Plans^{1) 2)} are established and became effective. Consequently, greater areas of Bangkok city are included as target area, called Bangkok Metropolitan Region (BMR)⁽¹⁾. Five vicinity areas, where are target area, obtained extreme infrastructure network. New urbanized area has been developed along the road network, as known ribbon development (Figure 1). Furthermore, this situation motivates developers to construct residential projects flowing in this area to support high housing demand. The projects have been disorderly overlapped on many paddy fields. The significant impact from land use transformation, changing from agriculture to urbanization and dose of new residential projects (called Gated Housing Project (GHP)) in a few decades. Consequently, sprawl emerged borderless around the city and spread in large scale, and then land use has rapidly



changed.

Figure 1: Urbanization Area Diffusion in Bangkok and greater area and its background (1930 – 2005)

The sprawl impact is investigated in various dimensions. Demolition of neighborhood relationship is an effect of sprawl that has little empirical evidence exists to support this notion¹⁴⁾. For example, characteristic associated with sprawl that can reduce the potential for spontaneous interaction is the privatization of open space. The low densities associated with the typical sprawling development provide ample room for gardens, patios and lawns. Thus, the need to make use of public parks or other public open space is reduced¹⁴⁾. Therefore, sprawl situation in BMR relates to neighborhood relationship problem that caused by new housing development (GHP), because of rapid migration and land use transformation. This transformation conduces to livelihood problems between newcomer and former villagers because of unplanned location of new residential development. For example, some former villages are enclosed by new housing projects with high fence; consequently, they might confront an accessibility problem. Moreover, contrast housing unit and project boundary design can impact on social segregation. Therefore, this study aims 1) to examine impact of different land use transformation caused by overwhelming migration, and 2) to compare neighborhood relationship between newcomer and former villagers through questionnaires in different case studies. The prospect outcome is suggestion for new housing development in sprawl area.

1.2 High movement of population and Land use transformation

Table 1. Population growth in BMR

Province in BMR	Area** (km ²)	Population** (pp)		Density** (pp/km ²)	Population Growth	Ratio* (1998) Agricultural/total area
		2004	2012			
Bagkok	1,568.737	5,6341,132	5,673,560	3,616.64	+0.7%	0.14
Nakhonpathom	2,168.327	789,016	874,616	403.36	+9.6%	0.51
Nonthaburi	622.303	942,292	1,141,673	1,834.59	+21.2%	0.22
Pathumthani	1,525.856	769,998	1,033,837	677.55	+34.3%	0.46
Samuthprakarn	1,004.092	1,049,416	1,223,302	1,218.32	+16.7%	0.09
Samuthsakhon	872.347	442,687	508,812	583.27	+14.9%	0.26
Total	7,761.662	9,636,541	10,455,800	1,347.11	+8.5%	

Source: **http://stat.dopa.go.th/xstat/pop55_1.html , *Ministry of Agriculture and Cooperation, 1998

Among six provinces of BMR, population growth rate in Pathumthani and Nonthaburi is significant different from others by 34.3% and 21.2%, respectively since 2004 (Table 1). Although both provinces have high movement of population, there is also large scale of agricultural area as shown 0.46 and 0.22 ratios. Those huge numbers of population is highly possible to replace agricultural area by residential area where support high demand of housing. The differences of land use transformation in Pathumthani and Nonthaburi bases on geographic and land composition in that area. This also impacts on distinct formation of new development such as housing projects (GHP) and another built-up area. As a consequence, the relationship between former villagers and newcomer is necessary to pay consideration and investigated because inhabitants will be directly troubled by disorder land use transformation. Hence Pathumthani and Nonthaburi were selected to clarify district that also faces high migration, population growth in Khlongluang and Bangyai district is 8.87% and 9.10%, respectively, higher than other districts.

2. Research methodology

Structure of this paper has conducted with two parts; first, we study background of sprawl development in BMR. Then we found that GHP development related to neighborhood relationship in Pathumthani and Nonthaburi need to be examined in term of background of physical land composition. Second, characteristic of inhabitants and neighborhood

relationship inside and outside gated housing project was clarified and assessed. We thoroughly observed physical and distributed questionnaires by face-to-face acquirement, which rely on literature review. Additionally, we also inquired non-structural interview to residents during observation that can support result from statistic. Summary, all results will be analyzed neighborhood assessment between inside and outside communities, especially, affect from gated housing development on newcomer and former villagers.

2.1 Measuring neighborhood relationship

According to many sprawl researches mentioned about adverse common impacts of sprawl is loss of sense of place and community⁸⁾. Some American gated community study revealed that gated communities reflect to varying degree four social values (sense of community, exclusion, privatization, and stability) in positive social value for the residents inside. In addition, the notion of social problems in sprawl area in section 1.1 also supports importance of neighborhood relationship investigation. Sense of community is a dimension in neighborhood relationship that applies to communities in both the geographic and relational sense, and should be considered distinct from individual characteristics⁹⁾. McMillan and Chavis (1986) discuss four key elements inside community: (1) membership, which involves the sense of belonging and emotional safety it provides; (2) influence, reflecting the ability to affect change in each other; (3) integration, which refers to the feeling or perception that needs are met through the cooperative behaviors of the group; and (4) shared emotional connection, which individual member’s commitment and shared life experiences or history of time and place. Moreover, relationship between physical aspect of community and social relation is also mentioned in many researches. Buckner (1988) revealed the physical attractiveness of the neighborhood also has been found to strength social cohesion. A well-defined boundary contributes to the connection to a particular place and the sense of community therein. The ultimate boundary of gated communities are often promoted as increasing sense of community, on the other hand, there is conflict on this discovery. Wilson-Doenges (2000) found that gated communities do not increase sense of community, and may actually decrease it, and give either a false sense of security or not sense of security at all. These findings focused inside community assessment, however, social problems in BMR also influence on people outside community. Therefore, inside and outside neighborhood relationship should be assessed in the same time.

2.2 Sampling and tools

Research population was calculated with Taro Yamane’s formula or table as follow;

Where n = Sample size

N = Population size

e = Sampling error (usually .10, .05 and .01 acceptable error)

$$n = \frac{N}{1 + Ne^2}$$

Table 2. Neighborhood assessment

Statement	Point Scale				
	1	2	3	4	5
Inside Community: Community Value					
(1) Environment Satisfaction	very dissatisfied	dissatisfied	neutral	satisfied	very satisfied
(2) Feel good when someone help to improve your community	strongly disagree	disagree	not sure	agree	strongly agree
Inside Community: Neighbor Interaction					
(3) Degree of trust in neighbor	very mistrustful	mistrustful	neutral	trustful	very trustful
(4) Number of acquaintance (persons)	0-5	6-10	11-15	Over 15	
(5) Number of friend (persons)	0-5	6-10	11-15	Over 15	
(6) Frequency of neighbor visiting	never	once a month	once a week	twice a week	almost everyday
(7) Frequency of talking to neighbor	never	once a month	once a week	twice a week	almost everyday
Outside Community					
(8) Perception to surrounding community	Feel bad	Neutral	Feel good		
(9) Number of using outside service in district (activities)	0	1-2	3-4	5-6	7

According to the formula, the sample size is 400 people when sampling error is 0.05 and population is 239,172 people in Khlongluang district and 126,562 people in Bangyai district. According to literature review mentioned above, neighborhood assessment in this paper consisted of; (1) inside relationship evaluation, which combined neighbor interaction and community value factors, and (2) outside relationship, evaluating by perception to surround community and number of using service outside community but in district. Respondents were asked to indicated their satisfaction, perception, frequency, and number of activity participation with nine statements referring to “your own neighborhood, community, and surrounding community”. Each statement was rated on point scale as shown in Table 2.

3. Characteristics of community and background of case study areas

3.1 Case 1: Khlongluang district, Pathumthani province

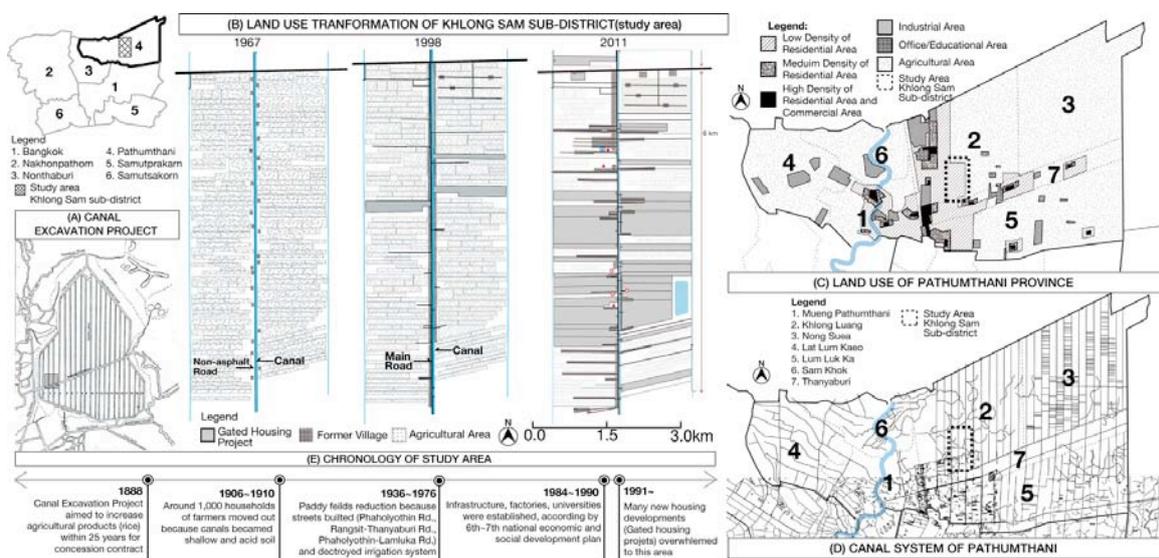


Figure 2: Land use and canal system of Pathumthani province

Beside Pathumthani is the high population growth; agricultural area is replaced by residential area (Fig.2-B). According to history of area, the study area was a part of drilling canal project and was used as agricultural area since King Rama V era (1868 – 1910), who bestowed on land of the north of Bangkok city as rice trading center of the region. The drilling canal project aimed to increase agricultural products (rice) within 25 years for concession contract. They ran the project from 1888 to 1913, which covered area around 1,350 km² (Fig.2-A). Farmers from many places moved in to settle down since 1895 with scatter settlement and temporary shelter to rent small paddy. During 1906 – 1910, around 1,000 households moved out because canal became shallow since 1906 and acid soil. Consequently, paddy fields declined around 60% of whole project area in 1936, and 1976 destroyed irrigation system⁷⁾ (Fig.2-E). Therefore, area in Khlong Luang, Lum Luk Ka, and Thanyaburi district regards as kinds of land readjustment⁵⁾ area especially in physical meaning condition. The road network was located to be parallel to grid canal system. Land configuration, which is geometric form such as rectangular, polygon and narrow shape, based on man-made water features (Fig.2-D). However, the highest number of house is in the third canal sub-district (Khlong Sam sub-district) by 128,859 units ⁽⁴⁾. In addition, its land use has been rapidly transformed from agricultural to residential, which contains GHP concentrated area that replaced many paddy fields (Fig.3-B). Hence, we selected Khlong Sam sub-district to examine relationship between residents inside and outside of new and former communities.

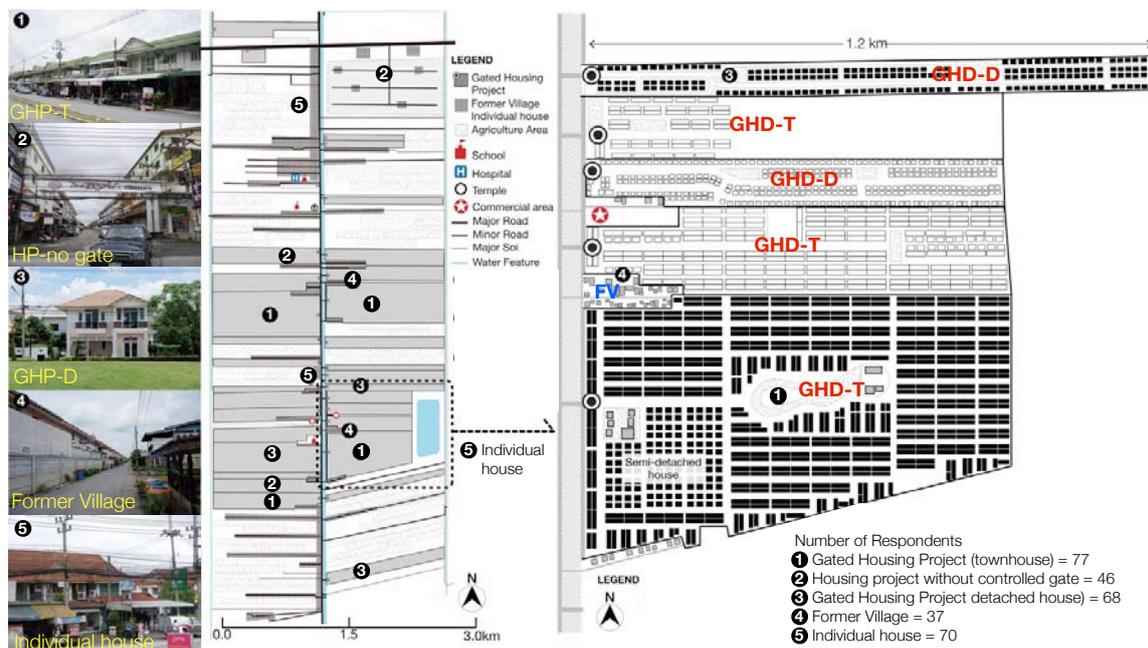


Figure 3: Characteristic of Gated Housing Project in Pathumthani

During site observation, GHP-T contain commercial business area inside the project, it makes community livelier. GHP-D tend to be inside environment with many aesthetic architecture and features but lacks of shops. On the other hand, former village does not have their own or nearby amenity. (Fig.3). It usually found gated housing projects located along main road in the west and along canal in the east. Because there is only one main 4 lanes road next to canal in the west side, people who live the opposite side have to connect by their own bridge, while, former village located in small alley on both sides of canal. We found that the road network conforms to canal system; it was constructed parallel and along with one side of the canals. All projects and communities face to main road with only one access, so they cause traffic conjunction during rush hours and supposed to be inconvenient to go to use public facility outside community. GHP-T plot is geometric form in huge scale (around 1 km. length); they contain over 1,000 households in one project, while GHP-D and former village is narrow. In addition, its master plan inside GHP-T is similar to GHP-D in grid pattern; (1) a main corridor connects from the gate to alley of housing units, and (2) a common space located in the middle of project. GHP appearance is significant symbol; one decorative gate at the front of project, and high fences (Fig.3). This ultimate boundary also implicitly enclosed outside community where is behind that fence. Hence appearances of different community in study area are obviously distinct in terms of size, plot shape, dwelling unit density in project, and architectural elements. Regarding these empirical evidences and literature review in section 2.1, the different physical appearance in study area possibly influence on neighborhood relationship both inside and outside community.

3.2 Case 2: Bangyai district, Nonthaburi province

Because geography of land is plain and contains many natural canals and connects to Chao Phraya River, this potential is suitable for agricultural activity. Original local people were from Ayutthaya who immigrated during Ayutthaya Era (14th-18th Century) as farmers who operated paddy fields and orchards¹⁴⁾. Many traditional local communities and local markets settle down as the waterfront. Agriculture business has been success; currently there were a huge agricultural product market center for western side of Chao Phraya River as shown in Fig.4. Since, urbanization is spread from the city by public facility and modern transportation such as outer ring road, the pattern of city has been changed. New housing

project development (GHP) occupied land and directly connected to the main road network without canal connection. On the other hand, local communities still located at the original settlement along to canals and access to small local road. GHP also replaces patchy paddy fields and orchards with free-form shape as follow fields' form, while some area is still doing agricultural business. Therefore, current land use of Bangyai district is hybrid between agricultural and residential area. The consequences of rapid transformation possibly impact on environmental and social aspect of newcomer and former villagers.

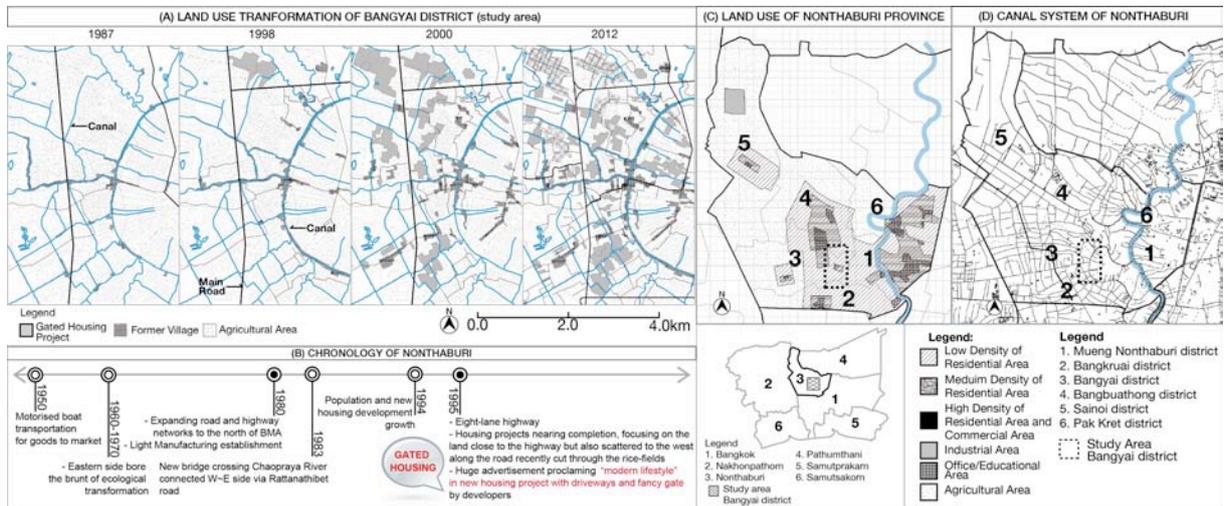


Figure 4: Land use and canal system of Nonthaburi province

Figure 5 shows the gate of GHP directly connected to main road and was back onto canal routes, in the same time former villagers settle down in waterfront area. The ultimate boundary of GHP enclosed community behind and closed involuntarily their accessibility. In this area, we also found some housing projects that were constructed since 2000 eliminated gate but kept fence and connected internal corridor of project to be public road. The number of dwelling unit in project is around 200-500 units that are smaller GHP in Pathumthani.



Figure 5: Land use and canal system of Nonthaburi province

4. Results

Regarding the site observation as mentioned in chapter 3, both case studies contained five typical types of community, namely, former village (FV), gated housing townhouse project (GHP-T), gated housing detached house project (GHP-D), housing project without gate (HP-No gate), and individual house (Ind). Although 400 questionnaires were distributed in those five types of community, but respondents are 300 and 363 copies, respectively. The first part of questionnaire aims to understand characteristic of inhabitants in different type of community that will be explained in section 4.1. Second part proposed to assess inside and outside neighborhood relationship among different those communities that will be presented results in section 4.2.

4.1 Characteristic of respondents in case study areas

Table 3. Demographic of respondent comparison between study areas

Item	Community type in Pathumthani					Community type in Nonthaburi					
	FV.	GHP-D	GHP-T	HP	Ind.	FV.	GHP-D	GHP-T	HP	Ind.	
Number of Respondent	37	69	77	46	65	44	27	56	182	54	
Mean	Age ^(b) (yrs)										
	Min	19	21	18	19	20	13	19	17	14	22
	Max	56	66	65	58	77	86	68	58	73	59
	Mean	41.30	40.19	37.59	38.73	37.841	48.71	40.25	35.45	38.88	35.31
	Std.	8.784	12.090	11.161	9.859	0.082	15.865	10.251	10.600	13.739	8.085
	Travel time to work ^(b) (mins)										
	Mean	46.50	53.63	45.86	45.33	41.94	31.82	39.34	36.92	33.04	19.45
	Std.	35.600	37.627	24.019	24.529	24.037	32.655	22.636	18.989	23.061	17.813
	Household member ^{(a)(b)} (pp)										
	Mean	3.50	4.00	3.66	3.93	4.67	4.35	3.72	4.11	3.93	5.18
	Std.	1.366	1.686	1.479	1.307	1.629	1.932	1.161	1.761	1.602	2.579
	Period of dwelling ^{(a)(b)} (yrs)										
	Mean	18.46	6.58	6.49	8.79	6.71	30.53	5.68	10.00	9.14	19.00
	Std.	11.061	4.261	4.740	5.800	8.271	19.921	9.131	18.921	7.506	12.944
	Household Income ^{(a)(b)} (THB)										
	Mean	2.08	2.12	1.96	1.95	2.23	2.23	3.54	2.35	2.47	2.18
	Std.	0.493	0.636	0.471	0.384	0.726	1.180	1.313	0.714	1.085	0.972
	Frequency	Occupation (%)									
• Government officer		37.8%	22.1%	23.1%	19.5%	17.1%	20.5%	42.6%	30.4%	12.8%	40.0%
• Company officer		13.5%	36.8%	33.3%	48.8%	38.6%	0.0%	13.0%	26.1%	16.8%	14.0%
• Business owner		24.3%	1.5%	5.1%	4.9%	1.4%	2.6%	33.3%	21.7%	17.3%	6.0%
• Shopkeeper		8.1%	17.6%	20.5%	14.6%	21.4%	46.2%	3.7%	13.0%	21.8%	20.0%
• Freelance		8.1%	22.1%	10.3%	12.2%	21.4%	2.6%	3.7%	8.7%	18.4%	4.0%
• Unemployed		8.1%	0.0%	7.7%	0.0%	0.0%	28.2%	3.7%	0.0%	12.8%	16.0%
Household Income (%)											
• 0 – 10,000 THB.		8.1%	10.3%	11.7%	9.8%	10.0%	28.2%	3.7%	4.3%	13.6%	20.4%
• 10,001-30,000 THB.		75.5%	70.6%	81.8%	85.4%	64.3%	43.6%	24.1%	65.2%	50.0%	55.1%
• 30,001–50,000 THB.		16.2%	17.6%	5.2%	4.9%	18.6%	12.8%	24.1%	21.7%	19.9%	14.3%
• 50,001-70,000 THB.		0.0%	0.0%	1.3%	0.0%	7.1%	7.7%	11.1%	8.7%	8.5%	6.1%
• Over 70,001 THB.		0.0%	0.0%	0.0%	0.0%	0.0%	7.7%	37.0%	0.0%	8.0%	4.1%
Workplace (%)											
• Bangkok city		21.6%	20.9%	20.5%	12.2%	30.4%	13.2%	40.7%	52.2%	22.2%	16.0%
• In this province		48.6%	32.8%	43.6%	70.7%	33.3%	23.7%	48.1%	39.1%	26.9%	74.0%
• At home		27.0%	46.3%	29.5%	17.1%	36.2%	52.6%	7.4%	4.3%	39.2%	8.0%
• Unemployed		2.7%	0.0%	6.4%	0.0%	0.0%	10.5%	3.7%	4.3%	11.7%	2.0%

Source: By researcher; Questionnaires' Results, 2013

Legend:

FV = Former Village
 GHP-D = Gated Housing Project (Detached house)
 GHP-T = Gated Housing Project (Townhouse)
 HP = Housing project without gate
 Ind. = Individual house (not by developer)
 (a) = Variable that Sig. <0.05 in Pathumthani
 (b) = Variable that Sig. <0.05 in Nonthaburi

Mean of Household Income:
 1.00-1.49 = 0 – 10,000 THB
 1.50-2.49 = 10,001 – 30,000 THB
 2.50-3.49 = 30,001 – 50,000 THB
 3.50-4.49 = 50,001 – 70,000 THB
 4.50-5.00 = Over 70,001 THB

The similar characteristics of respondents in five types of community in Pathumthani are occupation and workplace. Most of respondents are private company officers that work in Khlongluang district or at home. The indicators that related with different type of community and can clearly indicate distinct characteristic of five communities are; (1) Age of respondents, which FV is oldest, (2) household member, which illustrates density of people

in dwelling unit, (3) household income, which GHP-D and IND has highest average income in Nonthaburi and Pathumthani, respectively, and (4) period of dwelling, which FV live longest period as local people.

4.2 Neighborhood measurement between inside and outside relationship

Table 4. Relationship between characteristic of community and neighborhood relationship in Pathumthani

Variable		Inside Relationship							Outside Relationship	
		Community Value		Neighborhood Interaction						
		ES	UNI	DT	NA	NF	NV	TN	PSC	NOSU
Ind.	Age	0.011	0.061	0.187**	0.153**	0.117*	-0.010	-0.099	-0.008	0.006
	Fam.	-0.010	0.014	0.011	0.107	-0.089	-0.140	0.020	0.053	-0.105
	Inc.	0.025	-0.082	-0.056	0.016	-0.073	0.109	0.124*	0.011	0.035
	Pe.	-0.038	0.140*	0.0173**	0.240**	0.093	0.082	0.223**	0.015	0.240**
Dep.	ES			0.323**	0.166**	-0.088	0.045	-0.053	0.069	0.024
	UNI			0.455**	0.177**	-0.070	0.159**	0.062	0.134*	0.167**
	DT								0.050	0.063
	NA								0.194**	0.063
	NF								0.035	-0.026
	NV								0.046	0.258**
	TN								-0.164**	0.264**
PSC										
NOSU										

Legend:

- | | |
|---|---|
| ES = Environment Satisfaction | Age = Age of Respondent |
| UNI = Unification | Fam. = Family member (Density in one dwelling unit) |
| DT = Degree of Trust in Neighbor | Inc. = Household Income |
| NA = Number of Acquaintances | Pe. = Period of Dwelling |
| NF = Number of Friends | Ind. = Independent Variable |
| NV = Frequency of Neighbor Visiting | Dep. = Dependent Variable |
| TN = Frequency of Talking to Neighbor | * p < 0.05 |
| PSC = Perception to Surrounding Community | ** p < 0.01 |
| NOSU = Number of Outside Service Usage | Pearson correlation coefficient |

In Pathumthani, period of living correlated with inside and outside relationship in positive correlation. People who live former has stronger neighborhood interaction and inside-community value than newcomer, in terms of number of acquaintance and frequency of talking to neighbor. The elderly have higher trust in neighbor and a lot of friend than younger because of positive correlation coefficient. Salary of respondent related with talking to neighbor. The community value inside community correlated with outside relationship in terms of number of outside services because of positive coefficient. Often neighbor communication can create high outside relationship. Trust in neighbor and number of acquaintance strongly related with community value that illustrated by high correlation coefficient (Table 4).

Table 5. Relationships between characteristic of community and neighborhood relationship in Nonthaburi

Variable		Inside Relationship							Outside Relationship	
		Community Value		Neighborhood Interaction						
		ES	UNI	DT	NA	NF	NV	TN	PSC	NOSU
Ind.	Age	0.007	0.065	0.008	0.122**	0.088	0.077	0.196**	-0.011	-0.034
	Fam.	-0.176**	-0.128*	-0.136*	0.063	0.136*	-0.103	-0.097	0.084	0.059
	Inc.	0.044	0.036	0.079	-0.087	-0.022	-0.007	-0.064	0.009	-0.041
	Pe.	-0.111*	-0.145*	-0.148**	0.267**	0.154**	-0.104	-0.011	-0.119*	0.049
Dep.	ES			0.510**	0.028	0.048	0.009	-0.051	0.025	0.117*
	UNI			0.511**	0.128*	0.089	0.142*	0.076	-0.063	0.037
	DT								-0.072	0.007
	NA								-0.002	0.049
	NF								0.036	0.046
	NV								0.003	-0.047
	TN								0.064	-0.016
PSC										
NOSU										

Legend:

- | | |
|---|---|
| ES = Environment Satisfaction | Age = Age of Respondent |
| UNI = Unification | Fam. = Family member (Density in one dwelling unit) |
| DT = Degree of Trust in Neighbor | Inc. = Household Income |
| NA = Number of Acquaintances | Pe. = Period of Dwelling |
| NF = Number of Friends | Ind. = Independent Variable |
| NV = Frequency of Neighbor Visiting | Dep. = Dependent Variable |
| TN = Frequency of Talking to Neighbor | * p < 0.05 |
| PSC = Perception to Surrounding Community | ** p < 0.01 |
| NOSU = Number of Outside Service Usage | Pearson correlation co-efficiency |

In Nonthaburi, period of dwelling and density inside dwelling unit related with inside relationship in similar way, namely, there was negative correlation coefficient in community value aspect. Former people with big family less related inside relationship in terms of environment satisfaction and trust in neighbor. Moreover, outside relationship also correlated with period of dwelling in perception to surrounding community. However, people who have high inside environment satisfaction influence on trust in neighbor and number of outside service usage.

5. Discussion

Regarding table 3 and 4, period of living is an indicator of characteristic of community. Therefore, inside-outside relationship of former village in Pathumthani is higher than new community such as gated housing project with townhouse or detached house. Namely, former villagers have more friends, higher trust, and more united to inside community than gated housing project people. These results can be explained with difference of physical appearance of GHP and FV as follow; (1) size of new community is much more larger than former village, (2) number of dwelling unit in new housing project, and (3) area adjustment in new project has changed such as providing temporary commercial area and opened for outsider. These can create less trust on neighbor and inside community value. High number of outside usage in former village can increase mutuality to district. Because former villagers today do not have private facility, they have to share recreation space in public. On the other hand, housing project by developer provides private facility space, that decrease outside relationship. In order to improve outside relationship, neighbor communication should be promoted.

In Nonthaburi, period of dwelling also indicate characteristic of community. According to table 5, former villagers have low inside relationship, although they have many acquaintances. While people who live in gated housing project are newcomer, they know not so many people but satisfied inside community and have high trust. Because master plan of housing project provides more privacy and high quality of common facility, and there is less difference of social class. In addition, former villagers have lower perception to outside relationship than newcomer. This can be assumed there is confliction between former and newcomer in Nonthaburi area. According to Figure 5, boundary of new housing project obstructed accessibility and lead to environmental problem to former villagers. Community value can be supported by neighborhood interaction, namely, often neighbor visiting can promote unification.

6. Conclusion

The study revealed physical appearance of community related with inside – outside relationship of people who live in gated housing project and local people. We conclude and suggest ideas about new housing project improvement in sprawl area as follow;

In hybrid land use (Nonthaburi province); (1) In order to promote neighborhood interaction among resident in gated housing project, site planning should be more considered such as providing common space more than one place, and (2) Quality of environment outside gate housing project should be improved or better outside perception of former villagers by local government. Moreover, location of gated housing project should be controlled to reduce inconvenient accessibility of former villagers.

In land readjustment area and high density of gated housing project (Pathumthani province); (1) Scale of gated housing project should be reduced. Zoning rearrangement in project should be clear and controlled between commercial and residential zone, and outsider access.

In further study, dimension of neighborhood assessment should be assessed in deeply dimension and included another stakeholders' opinion, in order to propose more practical implementation.

Notes:

- (1) Bangkok Metropolitan Region (BMR), as the national plan, includes 6 administrative provinces are; 1) Bangkok: 1,568.737 km², 5,702,595 people, 2) Nakornpathom: 2,168.327 km², 851,426 people, 3) Nonthaburi: 622.303 km², 1,078,071 people, 4) Pathumthani: 1,525.856 km², 956,376 people, 5) Samuthprakarn: 1,004.092 km², 1,164,105 people, and 6) Samuthsakorn: 872.347 km², 484,606 people. Total BMR area is 7,761.662 km² and number of residents is 10,237,179 people. It consists of 69 districts in total. Source: <http://th.wikipedia.org/wiki/กรุงเทพมหานครและปริมณฑล>
- (2) 30 administrative districts consist of 14 districts of Bangkok city, 4 districts of Nonthaburi, 5 districts of Pathumthani, 5 districts of Samuthprakarn, 2 districts of Samuthsakorn, and 1 district of Nakornpathom.
- (3) Land Readjustment is a land management instrument by which a public authority assembles and controls conversion of land from rural to urban use according to town planning requirements. The landowners also collectively leave land for streets and other public services, build the required infrastructure wholly or partly adapt existing boundaries to the new plan.¹⁰⁾
- (4) Gated Community is part of the trend toward exercising physical and social means of territorial control with gates, private security guards, and barricades help control one's environment and improve quality of life.¹²⁾
- (5) Related Housing Development Regulations in BMR; 1) Principle City Plan by Department of Public Work and Town & Country Planning, 2) Land Allocation Acts by Department of Lands, 3) Building Code by Department of Public Work and Town & Country Planning, and 4) Environmental Impact Assessment (EIA) by Office of Natural Resources and Environmental Policy and Planning

References:

- 1) National economic and Social Development Board office of the Prime Minister Bangkok, Development of Urban and Specific Areas: Development Plan for Bangkok Metropolitan Region, the sixth National Economic and Social Development (1987-1992), 1987, 291-306 pp.
- 2) National economic and Social Development Board office of the Prime Minister Bangkok, Development of Metropolitan Region and New Economic Zone, the seventh National Economic and Social Development (1992-1996), 1992, 89-96 pp.
- 3) Galster, George, Royce, Hanson, Wolman, Hal, Coleman, Stephen, and Freihage, Jason (2001) "Wrestling Sprawl to the Ground: Defining and Measuring an Elusive Concept" Housing Policy Debate, 681-717 pp.
- 4) Department of Public Works and Town and Country Planning, 2006
- 5) Kounusay, Y., Sadik (2004) "Land Readjustment Process in Urban Design: Project Management Approach" Turkey, Izmir Institute of Technology publisher
- 6) Blkely, J., Edward, and Snyder, G., Mary (1997) "Forstress America: gated communities in the United States" Washington, D.C.: Brookings Institution Press
- 7) Asawai, S. (1987) "History of Rangsit Canal: Land Development and Social Impact during 1888 - 1914. Bangkok" :Thammasat University Press (in Thai).
- 8) Douglas E., Morris (2005) "It's a sprawl world after all" Canada: New Society Publishers
- 9) Lochner, K., Kawakami, I., and Kennedy P.B. (1999) "Social capital: a guide to its measurement" Health & place 5, Vol.5, 259-270 pp.
- 10) Roger, G.O. and Sukolratnametee, S. (2009) "Neighborhood design and sense of community: comparing suburban neighborhoods in Houston Texas" Landscape and Urban Planning 92, Elsevier, 325-334 pp.
- 11) Tippatus P. and Pongsatud M. (1982) "Housing in Bangkok: transformation in 200 years (1782 - 1982)" Bangkok: Chulalongkorn University press
- 12) Klinmalai, S. and Kanki, K., Characteristic of Sustainable Location for Townhouse Development in Bangkok and Greater Metropolitan Area, Thailand, Spatial Planning and Sustainable Development Approaches for Achieving Sustainable Urban Form in Asian Cities: Springer, 2013, 155-172 pp.
- 13) Paquet, C. et al., Reliability of an instrument for direct observation of urban neighborhoods, Landscape and Urban Planning 97, Elsevier, 2010, 194-201 pp.
- 14) Freeman, Lance (2001) "The Effects of Sprawl on Neighborhood Social Ties: An Explanatory Analysis", Journal of the American Planning Association, Vol.67 No.1 (November)

Problems and Strategies of Urbanization Development in Western China from the Perspective of Urban-based Society —A Case Study of Shaanxi Province

Yuan LV, Kewei LIU, Lin LIU, Dan ZHAO, Fujuan ZHANG; College of Urban and Environmental Science, Northwest University; China

In case of peer review: ID 138

Synopsis

Serious problems in the urbanization process of western China are raised from the perspective of urban-based society, taking Shaanxi, a typical province in natural geographical features and fast developing economy in western China as a case, and then the strategies are put forward to solve these problems.

1. Introduction

Urban-based society is a kind of social formation with urban population as the main part, human behavior and non-agricultural industries layout in urban area and residents survive in urban lifestyle. At present, whether a country or a region enter urban-based society rely on the threshold internationally that the proportion of urban population reaches 50 percent. Urbanization rate between 51% and 60% is for elementary urban society, 61% to 75% for intermediate urban society, 76% to 90% for advanced urban society and more than 90% for complete urban society (Pan and Wei, 2012). Transformation from village-dominated society to urban-based society means the great progress of agricultural modernization, industrialization, new urbanization and the fast pace of social progress, economic growth and modernization (Zhao, 2012). The achievements on urbanization in academic circles are fruitful; however, the study on urbanization from the perspective of urban-based society now is in its infancy. Among the scholars who studies on urban-based society, A recent study illustrates the urbanization strategies of Britain, America, Japan, Brazil, etc. from the perspective of urban-based society (Zhao, 2011) and challenges and choices of China (Zhao, 2012). Pan and Wei (2012), GUO *et al.* (2013) thought that there are 5 standards for urban-based society that are urban population, spatial form, life-style, social culture and relations between urban and rural areas.

China's urbanization has just reached 51.27% in 2011 (Zhao, 2012), which means China has ended the times of village-dominated society and entered urban-based society. Coastal developed regions of eastern China such as Beijing, Shanghai, Guangdong, and Jiangsu provinces have entered urban-based society many years ago. However, the concentration of large scale of migrants to the developed regions has led to series problem like population explosion, traffic congestion, environmental pollution, housing shortage, jobs crisis, etc. social contradictions are increasingly prominent under the premise that not foreseeing and avoiding these problems. Urbanization of Shaanxi reached 47.3% in 2011 (Ren *et al.*, 2013) and is about to enter urban-based society. Besides, Shaanxi develops faster than other provinces like Guizhou, Yunnan, Guangxi, etc. in western China and Hainan, Heilongjiang, Shanxi, etc. in middle part of China. Besides, GDP per Capita in Shaanxi has exceeds 5000 dollars¹ which makes Shaanxi the 3 place in western China. In this case, this paper is about to discuss the new problems and strategies in the process of Shaanxi urbanization from the following 5 aspects so as to provide experience reference for similar areas in China.

2. Problem analysis of Shaanxi urbanization from the perspective of urban-based society

2.1 Peri-urbanization is increasingly significant

2.1.1 Population peri-urbanization

Peri-urbanization population includes population moving from rural to urban area and changing from "agricultural to non-agricultural" residence registration by demolition and reconstruction. They live in city but get worse treatments on public service, employment,

social security and housing comparing to citizens (GUO *et al.*, 2013; Liao and Zhang, 2004; Chen, 2012).

As the typical representative in western China, the scale of peri-urbanization population in Shaanxi has enlarged greatly from 3.86 to 7.35 million², which has covered 43.09% of urban population and 19.64% of permanent residents (Tab.1). Among the prefecture-level cities, the peri-urban population of Xi'an, the capital city of Shaanxi, has grown to 2.18 million². Peri-urban population intended to gather in big cities like Baoji, Yulin, Hanzhong etc. rather than small cities or towns. Besides, most peri-urban population keep agricultural residence registration, living habit and neighborhoods, some of them are taking rents as their main income, which made them lack of willingness to make a living by their wisdom and efforts. All these go against the connotation of urban-based society.

Tab.1 Peri-urbanization population change of Shaanxi from 2000 to 2010

	Urban population (million)	Non-agricultural population with household registration (million)	Peri-urbanization population (million)	Percentage of peri-urbanization population (%)
The fifth population census	11.63	7.77	3.86	33.22
The sixth population census	17.06	9.71	7.35	43.09

Data source: The fifth and sixth population census.

2.1.2 Spatial peri-urbanization

Land urbanization faster than population urbanization is a significant problem in the development of many cities in China. The extensive use of urban land will cause sharp conflicts between human and land under the background of urban-based society. It is common that urban lands expand blindly in China. Population in China grow with the annual average rate of 0.5%³, but the construction lands of municipal districts expand 10 times than that of the population speed since 2005. Shaanxi population growth rate is 0.24%¹, which is much slower than some other provinces in China (Fig.1). However, its expanding speed of construction land is 6.27%⁴, much faster than other provinces in the corresponding period, Xi'an is a typical one (Fig.2).

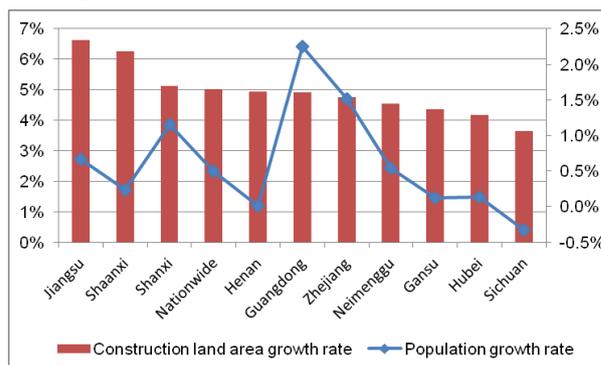


Fig.1 Construction land area and population growth rate of Shaanxi comparing to some other provinces in China since 2005

Data source: Shaanxi Statistic Yearbook.

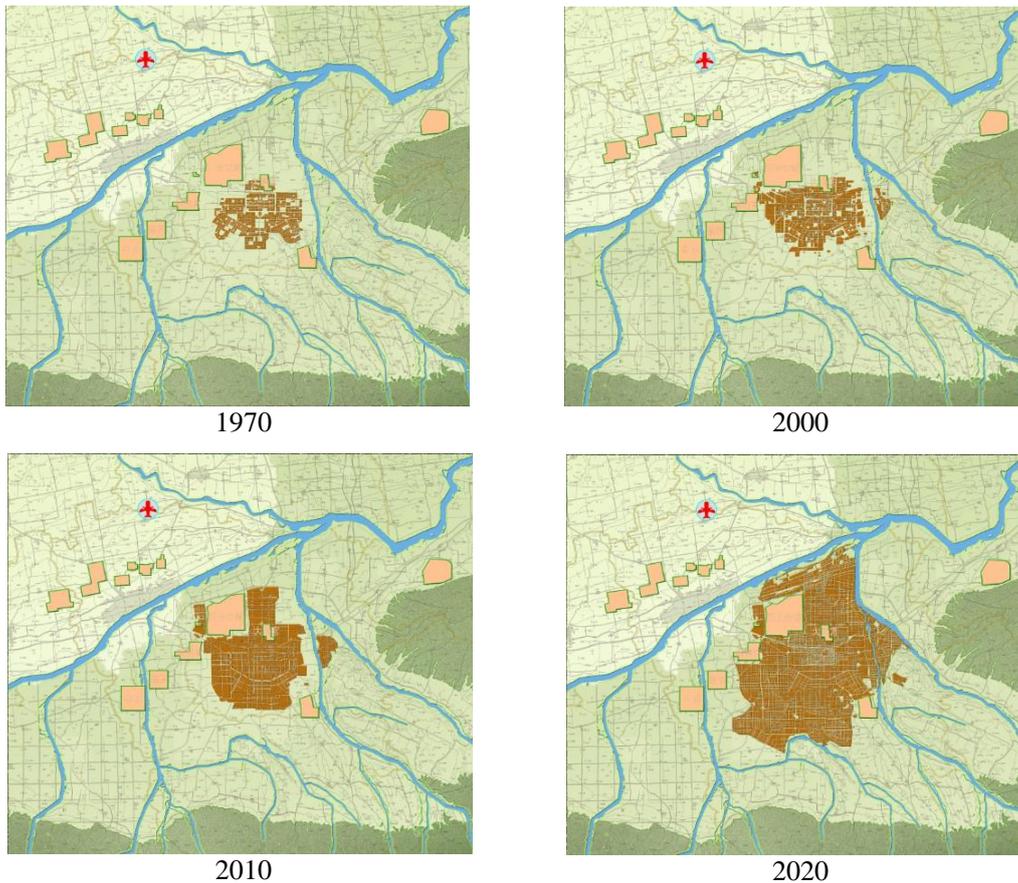


Fig.2 Spatial expansion diagrammatic sketch of Xi'an main city

Data source: Xi'an Urban Master Plan (2004-2020).

Landscape of towns are much alike rural areas and rural area are alike towns are the true portraiture for peri-urbanization area. On one hand, urban constructions always bypass the peri-area because the residents living there don't want to give up the rents of their houses, which lead to urban villages. Landscapes in such area always change rapidly affected by multi-influence of urban construction and environment, and its instability is stronger than both urban and rural area. On the other hand, convenient location, low living expenditure makes the area the first choice of the rural migrants. However, such area has always been the blind area for city management, making it bad accommodation, bad security area to live. This unique landscape is due to the double lags that are the increase of urbanization lagging behind the rate of both non-agricultural employment and industrialization.

2.2 Unreasonable spatial layouts of cities and towns

2.2.1 Big cities develops surpassingly while small towns are underdevelopment

First, metropolis and big cities developing surpassingly is a significant phenomenon in the process of Shaanxi urbanization. The concentration of population to big and metro cities is due to its economic, facilities, transportation, living expenditures and civilization superiority than small cities and towns. And the gathering of population will enhance the renewal and perfection of the conditions to attract more people, which will raise their position in lager regions (Zheng *et al.*, 2003; Pan, 2005). In 2000, there is 1 metropolis, 4 medium-sized cities and 5 small cities while no big cities, making a unstable urban system. But till 2011, Baoji, Xianyang have grown up to big cities and Yan'an, Ankang have ranked in medium-sized cities (Fig.3). So Shaanxi has formed a urban system with a structure of 1 metropolis, 2 big cities, 5 medium-sized cities and 3 small cities. We can tell from the changes that though the number of big cities has increased, but the number and scale of small cities declined, making the urban system still unstable and unreasonable (Tab.2).

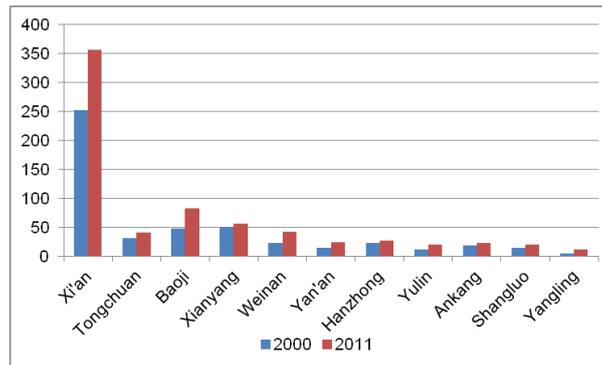


Fig.3 Urban scale change in prefecture-level cities of Shaanxi

Data source: Shaanxi Statistic Yearbook.

Tab.2 Change of city size of Shaanxi

Urban scale	Number		Proportion (%)		Population scale (million)		Proportion (%)	
	2000	2011	2000	2011	2000	2011	2000	2011
>1 million	1	1	9%	9%	2.53	3.57	52%	51%
0.5-1 million	0	2	0%	18.2%	0	1.39	0%	20%
0.2-0.5 million	5	5	45.5%	45.5%	1.73	1.55	35%	22%
<0.2 million	5	3	45.5%	27.3%	0.62	0.50	13%	7%

Data source: Shaanxi Urban Construction Statistics Report.

Second, the phenomenon of weak small towns is getting series. Average population of 10 municipal districts is 1.26 million¹; the population of only 32 counties out of 83 as the intermediate level of urban system has exceed 100 thousand⁴; the percentage of small towns with less than 10 thousand people covers 88.6% of the total number 1011⁵. However, small towns are the key carriers to develop non-agricultural industries and hold rural migrants. So we can confer that weak base and insufficient development power are the main shackles for Shaanxi urbanization.

2.2.2 Population density and population change differs greatly in different regions

Population density in a certain time can reflect its static population distribution. The population density of Shaanxi is of great difference, which differs from 18 to 5000 people¹ per square kilometers. Fig.4 shows that population density in Guanzhong area of Shaanxi is the highest, which is 400 people per square kilometers, and most population is gathering along the Weihe River. Xi'an is the most densely populated city with 2000 people per square kilometers. Southern part is the second densely populated part with 100-500 people per square kilometers and northern part with the density under 100 people per square kilometers. Comparing with 2000, the population weights of Guanzhong and northern part have raised 2.37 and 0.24 percentage¹ points separately (Fig.5), which have close relationship with the construction of Xi'an metropolis and energy development. However, population weight of southern part of Shaanxi has decreased 2.6 percentage¹ points; the reason for this is that its development is confined by available lands, environmental protection and capital shortage. We can infer that people intend to move to fast-growing cities like Xi'an, Yan'an, etc., especially to those municipal districts of metro and big cities.

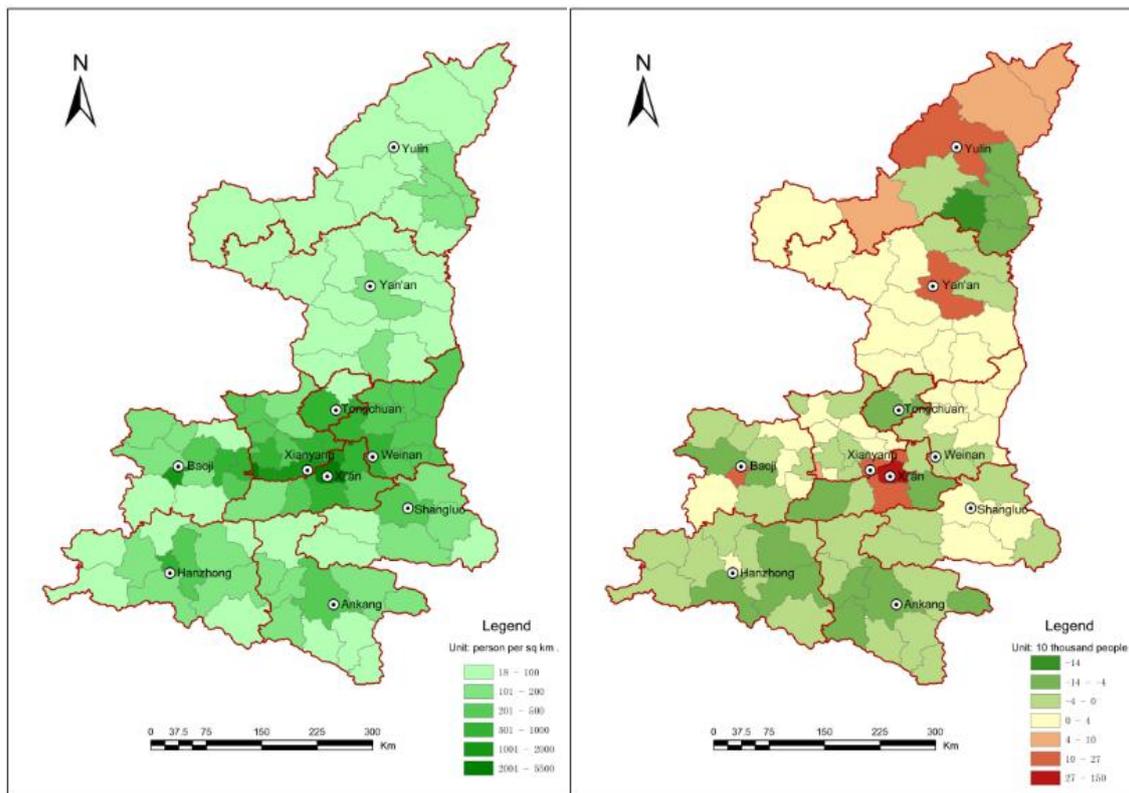


Fig.4 Population density of Shaanxi

Fig.5 Population change from 2000 to 2010

Data source: Shaanxi Statistic Yearbook.

2.3 Urban characteristics are missing

Urban-based society asks the urban area should have distinctive characteristics which can embody its cultural deposits and landscape characteristics. Urban characteristics have been a judging standard for a long time. Xi'an is a typical city of significant characteristics with clear functions and division in different blocks. The northern part of Xi'an is a typical label of modern industry in Shaanxi taking economic and technical development zone as its carrier and undertaking advanced equipment manufacturing as its leading industry. The southern part of Xi'an takes Qujiang New District as its carrier with traditional architectural style and increasingly prosperous cultural industry. The western part of Xi'an has solid foundation on emerging industry, hi-tech industry, information industry and creative industry relying on Xi'an High-tech Industrial Development Zone which reflects the advantages of sci-tech talents, creation and modern city characters. The eastern part of Xi'an exerts itself to forge green lung of Xi'an to reappear water and ecological landscape with Chanba Ecological Zone as its carrier. However, other cities in Shaanxi don't have significant characteristics like Xi'an. These cities have similar architectural style with more and more slab-type apartment building, similar road label and landscape opusculum in public space, and long overshadowed buildings. The feeling of "thousands cities with same face" and "somewhere in time" is stronger than ever before, which make the city recognition discount heavily.

2.4 Distance between urban and rural area is enlarging

One of the characters of urban-based society is harmonious co-prosperity and advancing as a whole. But the distance between urban and rural area in Shaanxi is enlarging (Tab.3), which still has a long distance to meet the basic demand for urban-based society.

In income and expense aspect, the income balance between urban and rural residents enlarges from 3680 Yuan in 2000 to 13217 Yuan¹ in 2011, the urban/rural consumption ratio is 3.5:1, urban living condition is superior to rural significantly on indexes of living quality like number of computer per 100 households and percentage of household expenditure on education, culture and entertainment. But percentage of resident expenditure on health care

in rural area is increasing, which means inadequate rural medical insurance system and no proportionately change between rural resident expenditure on health care and the income.

In investment in fixed assets aspect, urban area accounts for the vast proportion of the investment, the proportion even reached 95%¹ in 2011. The widening investment distance between urban and rural area make the rural environment improve sluggishly. So the survival and development distance between urban and rural area is getting even large.

In landscape aspect, urban area is a regional integrated system containing physical features like rivers, hills and artificial scenic such as cultural relics and historic sites, buildings and structures, public facilities and streets. However, rural landscape is featured by messy layout and style of architecture, mixed function of land use, extensive way of land use and appalling sanitary conditions.

In living condition aspect, urban area is facilitated by complete public facilities such as education, medical care, sports, recreational facilities and municipal facilities like road and pipe networks. But in rural area, road hardening rate is too low; configuration of reading room, activity rooms for old people, sports and recreational facilities is not complete at all. The efficiency of many facilities is too low because they are layout near village committee making them not convenient for those who live far away from the committee to use. Environmental pollution in rural area is getting serious, sewage depending on evaporation and rubbish on wind blows are the true portraiture. Proportion of elderly people relying on pension in rural area is only 4.6% (Han and Wei, 2012), covering less than urban proportion (Zheng *et al.*, 2003). Besides, rural schools are lack of educational resources; some school buildings have serious security threats.

Tab.3 The distance between urban and rural residence in Shaanxi province

Year	2000		2005		2011	
	Urban	Rural	Urban	Rural	Urban	Rural
Per capita income(Yuan)	5124	1443.9	8272	2052	18245	5028
Per capita expenditure(Yuan)	4277	1251	6656	1896	13783	4496
Investment in fixed assets(Billion)	64.4	10.1	184.1	14.1	816.7	39.3
Number of computer per 100 households	7.03	0.18	27.9	0.5	82.4	16.6
Percentage of household expenditure on education, culture and entertainment (%)	12.8	14.5	16.3	15.7	13.5	9.0
Engel coefficient	35.8	43.5	36.1	42.9	36.6	30.0
Percentage of resident expenditure on health care (%)	7.9	7.3	9.1	8.7	8.0	11.9

Data source: Shaanxi Statistic Yearbook.

2.5 Resources and environmental problems are standing out

Urbanization is the concentration of population and industries. However, the concentration also means the gathering of production and living pollution. So the quality of urban ecological environment is the important index of urbanization and has got more and more attention. Urbanization reaching 50% not only mean the great change of social structure, but also means the transformation of industry from the second industry to the third industry. Complex non-agriculture industry demands diverse production and consumption, which makes the urban system even complex. Resources and environmental problems are standing out in the cases of limited urban environmental capacity.

The problems are expressed on the following aspects. First, urban expending has occupied a great number of cultivated lands; cultivated land in Shaanxi has reduced sharply from 3114 to 2861 thousand hectares¹. Second, air are polluted in every level of Shaanxi cities, and the more advanced of economy developing, the serious pollution it has; in much time of a year, PM2.5 in Xi'an has exceed 100⁶, making Xi'an a national heavily polluted city many times. The reason for this can be explained by more than 70%¹ coal consumption out of energy consumption, coal consumption can discharge waste gas and water, which are the main sources of pollution; besides, raise dust and automobile exhaust are other reasons for air pollution. Third, inappropriate or under-standard deposition of "three wastes" will also lead to environmental degradation, insufficient processing capacity of facilities and lagging infrastructure construction than population concentration can account for this.

Comprehensive utilization of industrial solid waste of Shaanxi is only 60%⁴ in 2011, Shangluo, a small city in Shaanxi, is less than 7%⁴. Shaanxi urban sewage treatment rate is just 82%⁴.

3. Strategies to meet urban-based society

3.1 Innovating social security system

The key to solve the problems of peri-urbanization is reforming a series of supporting system which are residence registration system-centered. Explore new way to reform residence registration system draw on the practical experience of Shanghai, by adopting the residence registration system of identity cards and residence permits which are taken as certification to participate in production and living activities in the city, and audit regularly. Meanwhile, take transient population's social security, medical and health care, children education, occupation introduction, employment training, legal aids and so on into the management categories of residence permit. The insurance scope of security housing which is another main content of social security should be extended reasonably from housing difficult family having urban residence registration to those holding residence permit living above a certain year, referring to the corresponding type of housing security aiming at housing difficult family according to income level. By these means to set up the fair and equal security network system within a certain area (such as provincial area) and release anxiety caused by population migration. In addition, rural residents who don't want to live in the countryside are able to live in the town comfortable and realize complete urbanization gradually through switching the homestead to security housing and social security.

3.2 Optimizing urban developing space

It is necessary for Shaanxi to implement the strategy regarding local conditions of urbanization and realize regional coordinated development. It suggests taking metro and big city as the center node to build networked spatial pattern of urban system which is multiple, multipolar, and connected by traffic corridor (Fig. 6). Networked spatial pattern of urban system takes Xi'an international metropolis as regional development core, Yulin, Baoji and Weinan, Hanzhong particularly as the growth pole of northern, Guanzhong and southern area separately of Shaanxi province, Yan'an, Tongchuan, Ankang, Shangluo, Hancheng, Yangling as regional central cities. The urbanization of center node should focus on mining development potential, improving quality, and promoting the transformation to senior urban social. The cities of regional growth poles should turn to improve urban development environment, guide the aggregation of population and industry, expand city scale, enhance influence, and transfer into the primary city society. The urbanization of regional central cities should focus on stronghold spatial development strategies which can speed up the urbanization process through enhancing the ability of aggregation and influence of regional central cities on the premise of ecological protection. The development of small cities should be paid more attention with the rapid development of big cities. Since small cities have the potential to develop into regional growth poles that can absorb rural population and has strong radiation ability.

In order to change the situation that urban primary index of primate city is too high and small and medium-sized cities lag behind, it is necessary to strengthen the interaction between cities and towns on the basis of existing urban system, taking urban agglomerations as the primary form in Guanzhong area which has stronger resource and environmental capacity (Zhang and Liu, 2012; Wan and Zhu, 2010). From the perspective of urban economics, polycentric structure of urban agglomeration is helpful for preventing city disease caused by excessive concentration of urban functions as well as redundant construction and waste caused by excessive dispersion. So taking urban agglomerations as the primary form of urban system is the main direction of improving regional competitiveness and attracting population to gather to promote urbanization (Zhang and Liu, 2012; Li, 2008).

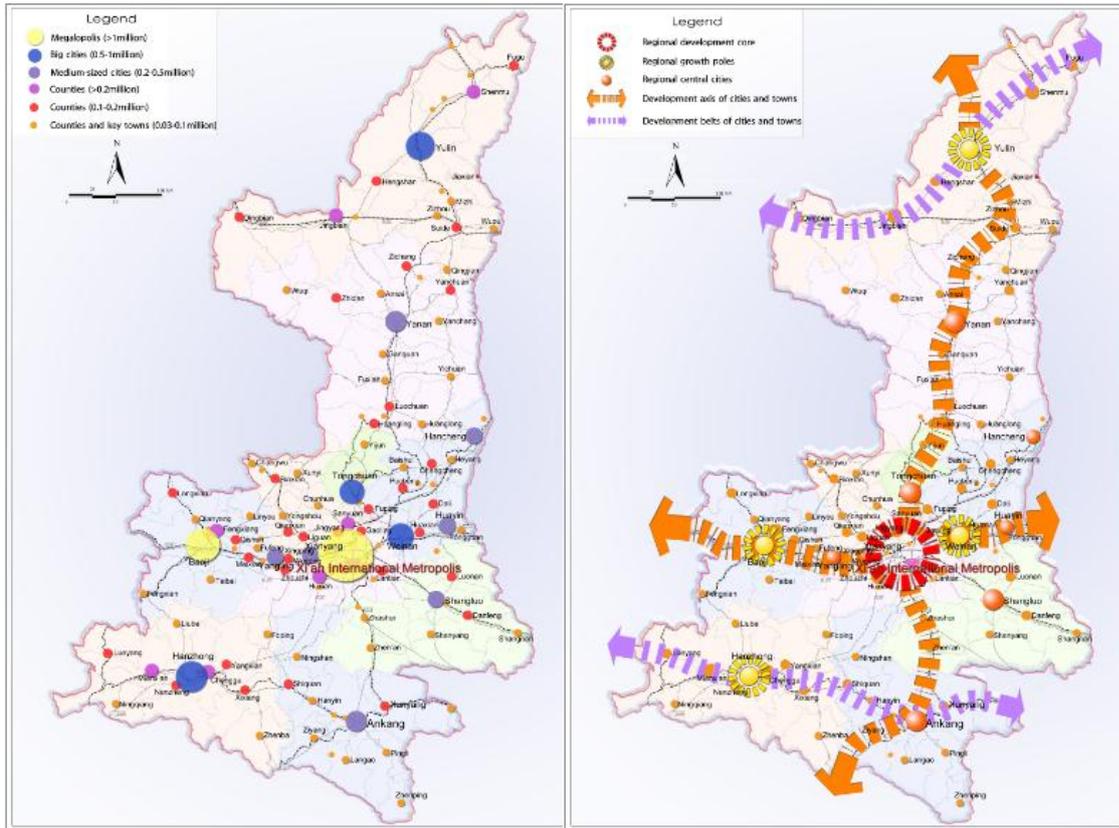


Fig.6 Shaanxi urbanization planning

Data source: The twelfth five-year urbanization plan of Shaanxi province.

3.3 Figuring clear urban characteristics

The establish of urban characteristics should be done with city culture as the foothold, with city history as extension, city feature as starting point to show the integration of city characteristics by urban planning, architectural design, landscape design and construction in it. Urban road named after historical figures and streets can reflect the integration with local culture. Architecture design also can reflect the local culture like architectural style of rural community, such as Pingli county in Ankang (Fig.7). From the perspective of different cities in Shaanxi, Xi’an and Xianyang can highlight city characteristics based on the long sequence and thick accumulation of Qin, Han, Tang history and culture. Baoji, Weinan, Yanan, Yulin should grasp their local culture elements to highlight city characteristics, such as the promotion of Xifu culture of Baoji, the inheritance of traditional opera of Weinan, the red culture of Yanan, the earth construction of Yulin. Ankang , Hanzhong, Shangluo can create urban leisure culture based on their typical natural scenery to realize integration of urban planning and mountain as well as water; at the same time, the historic town as architectural feature should be attached more importance.



Fig.7 New rural communities in Pingli county, Ankang city, Shaanxi province

Data source: Taking by author.

3.4 Overall planning for urban-rural development

After recognizing the importance of harmonization between urban and rural area, Shaanxi has put strategic focus on government-subsidized housing, issues of agriculture, farmer and rural area, equalization of basic public service, energy-saving and emission reduction, coordinated development of regions etc. We can tell that formerly thoughts of emphasizing urban but ignoring rural area have been broken and the development of rural area has been raised on an important position. The primary task is to narrow the gap between urban and rural area.

First, narrow the public service gap to realize equalization (Hong, 2008). In the premise that drafting a unified accessory standard for public service in the circle of province, governments who is capable of providing the basic service can solve their own, and other governments without sufficient finance can use financing mode like BOT to get the basic money to provide service. On education aspect, build a rotating mechanism of teachers from urban and rural schools to balance the teaching resources and avoid too much concentration of teachers in urban area by awards or performance; increase input on education in backward areas and improve the quality of educational facilities to realize educational opportunity and process equally. On medical care aspect, compile regional medical plans guided by demand difference and adjust medical resources layout by population distribution and migration trend. Second, narrow the infrastructure gap. Build convenient transportation linking nearby towns or cities to improve external traffic; villages near towns or cities can extend the water pipes to rural houses while other villages can build central drinking-water source; improve sewage pipes to end the current sewage crosscurrent situation; advocate designated collection, sorting collection and processes together of household waste to improve rural living conditions. Further extend the electricity, communication and network to rural houses to make the rural residents get the same access with outer world as urban residents do.

Third, narrow the income gap. On one hand, strengthen the base of urban non-agricultural industry to provide more working opportunities and raise the income level of migrants; on the other hand, it is necessary to develop rural characteristic economy, villages near cities can develop modern agriculture like rural tourism, experience farming and picking garden while villages far from cities can improve agricultural efficiency by enhancing the level of agricultural modernization and large scale production; improve agricultural management to raise the income level.

3.5 Strengthening the environmental protection

Confined by lag ecological construction, old manage concept, level and matures, a series of problems has broken through the capacity of resources and environment and actions should be taken immediately. Taking Shaanxi as an example, firstly, metropolis and big cities should develop around the concept of compact development and smart growth, advocating compact mix land use pattern to raise land use efficiency. Secondly, increase the investment scale on pollution treatment by improving energetic consumption structure, advocate clean energy,

build multi-scale green belts, hoard construction in process and raise vehicle fuel efficiency to prevent the air quality from declining. Third, increase investment on construction and operation of infrastructures, especially for refuse and sewage treatment plants to end the embarrassing situation that facilities in some counties stop working due to expensive operation costs. Forth, environment is a king of public goods that every can own, its maintaining and improvement can't go without every resident. So public participation not only reflects on the participation of decision-making, but also on obligations to enhance everyone's environmental awareness and protection actions starting from our own.

Endnotes:

1. *Shaanxi Statistical Yearbook*.
2. *The fifth and sixth population census*.
3. *China Statistical Yearbook*.
4. *Shaanxi Urban Construction Statistics Report*.
5. *The sixth population census*.
6. <http://www.pm25.in/xian>.

References:

- [1]. Chen, B.B.(2012). "Review on identification method and driving mechanism of peri-urban area", *Progress in Geography*, Vol. 31 No. 2.
- [2]. Guo, Y.B., Wei, H.K., Yuan, X.M.(2013). "Ten big challenges China is facing in urban-based Society", *Academic Journal of Zhongzhou*, No.1.
- [3]. Han, Y.M., Wei, M.Y. (2012). Just over twenty percent old people mainly live on pension [online]. Beijing: The Beijing News. http://epaper.bjnews.com.cn/html/2012-10/23/content_382215.htm?div=-1. [Accessed on 31th May, 2013].
- [4]. Hong, Y.X.(2008). "Urban-rural differences and the rank of priority between the city and the country in the coordinated development", *Contemporary Economic Research*, No.1.
- [5]. Li, J.W.(2008). "The important development trend of China's urbanization: the city group (Circle)'s appearance and the demand of investment", *Innovation*, No.3.
- [6]. Liao, Z.H., Zhang, G.Y. (2004). "Analysis on obstacles and countermeasure of informal sector employment in our country", *Journal of Kunming University*, No.1.
- [7]. Pan, J.H., Wei, H.K. (2012). *City development report of China No.5: Green prosperous towards the city era*, Beijing: Social Sciences Academic Press.
- [8]. Ren, Z.Z., Shi, Y. Pei, C.R. (2013). *Shaanxi Blue Book*, Beijing: Social Sciences Academic Press.
- [9]. Wan,G.H., Zhu, C. P. (2010). "The problems and thinking of Chinese urbanization" , *World Economic Papers*, No.6.
- [10]. Zhang, Z.H., Liu, F. (2012). "The current city problems and governance of our country", *Development Research*, No.2.
- [11]. Zhao, P.H., Sun, J.W. (2011). "Urbanization in the context of urban-based society: other countries' experience and China's choice", *Urban Studies*, Vol. 18 No.9.
- [12]. Zhao, P.H.(2012). "Challenges and solution of the urban-based society", *Urban Studies*, Vol. 19 No. 6.
- [13]. Zheng, Y.T., Liu, S.H., Chen, T. (2003). "The characteristics of peri-urbanization region: a case study of Dongguan municipality in Guangdong province", *Geographical Research*, Vol. 22 No. 6.

Conflicts in land and housing markets in Kolkata: Emergence of a divided city

Sheuli MITRA, School of Planning and Architecture, Bhopal, India

Tapas MITRA, School of Planning and Architecture, Bhopal, India

Monidip CHATTERJEE, Centre for Habitat, Environment & Disaster Management, Kolkata

Suchandra BARDHAN, Jadavpur University, Kolkata, India

1. Research Background

The population of India in 2011 stands at 1.21 billion, of which 31.16% is urban, translating to around 377 million people living in urban India. In the last decade from 2001 to 2011, the urban population has grown by an estimated 90 million and the country's rate of urbanization has increased from 27.81% to 31.16% in the same period. Additionally, urban India had a total housing requirement of 26.53 million housing units in 2012, as estimated by Government sources. 99% of this housing pertains to the lower income groups of population. Government sources also estimate the total number of houses constructed in urban India as 14.34 million in the 10 years since 2002-2012. The housing gap is appalling and the dilemma of providing the basic need of shelter to an inordinately large segment of urban population unable to afford housing, is perhaps the biggest challenge of Indian cities.

In post-independence India, the decade of the 1950's saw construction of large planned townships developed by the State along with major employment hubs like factories and state capitals. These new towns were developed on land acquired by the 'Land Acquisition Act, 1894', which enabled the state to acquire land for public use. In the middle decades from the 60's to the 80's, most residential development was in the form of satellite towns around metropolitan cities and large urban extension areas. The progress of actually developing these residential townships was slow and sporadic, due to lack of public funds. The onus of providing urban infrastructure and housing in India had been solely on the Government in these years and the private sector had been totally excluded from the provision of urban services.

A change in the perspective of urban development in favor of a liberal system of governance and management is clearly discernable in India, as also several other developing countries since the mid-1980s. A recent work 'India's New Economic Policy- A Critical Analysis',¹ through a series of critical writings, discusses the developmental approach to understanding the growth scenario resulting from the introduction of a neoliberal approach to economic policy. The demographic explosion and infrastructure deficiencies in most cities and the inadequacy of the state and local governments to make adequate investments to alleviate this forced many countries including India to usher in programmes of globalization and 'structural reform'. Amitabh Kundu in his article 'Urban System in India'² discusses how these measures have been responsible for '*the segmentation of India's cities, the accentuation of intra-city inequalities, and a strengthening of the process of degenerated peripheralization.*'

The context of the quoted text, one among many other recent critiques on the effects of the opening up of the economy for the provision of urban services, forms the backdrop of this research. The impact of economic reforms and resulting urban management systems on urban morphology and structure of the city have been analysed through a case study of Kolkata, one of India's most populated cities. The emphasis has been on the emerging divide in the character of peripheral residential development of the metropolitan area of Kolkata.

2. The Research Structure

'Urban spatial structures are usually the unintended result of unforeseen consequences of policies and regulations that were designed without any spatial concerns.' - Alain Bertaud in 'The spatial organization of cities: Deliberate outcome or unforeseen consequence?'³

The present study uses the work of Alain Bertaud as a starting point of reference in understanding the dynamics of land markets and urban form. Several parameters of analyzing cities are identified by Bertaud and have been referred to for formulating the research framework for analyzing the land and housing markets of Kolkata Metropolitan area.

The present work has undertaken the following research tasks using appropriate tools for the purpose of analysis of land markets and urban form:

- i. Introducing the study area of Kolkata Metropolitan Area in the context of its suburbanization.
- ii. Reference to salient factors of Alain Bertaud's studies used as reference in this research.
- iii. Commentary on chronological density maps of the metropolitan area sourced from planning documents.
- iv. Interpretation of Landsat images to map the extent of built up area in the KMA area and identification of the predominant directions of suburban growth on a temporal scale.
- v. Commentary on the role of the Metropolitan Development Authority and other state parastatal agencies in developing organized housing and township projects in these suburban areas.
- vi. Commentary on the recent trend of private developer driven residential development in these growth corridors.
- vii. Interpreting time series data from archived Google Earth images to analyse the pattern and morphology of development in one of the selected suburban areas.
- viii. Plotting of land price gradient along various suburban corridors and correlating it to other factors affecting it.
- ix. Conclusions and learnings from the emerging pattern.

3. Land Markets and City Structure

A large body of work by Alain Bertaud discusses the impact of land prices on urban development and vice-versa, analyzing various cities across the world. It is interesting to note the variations in population densities in cities with different land price gradients. The classical Bid Rent theory which explains the dispersal of urban population in response to the price of land, fails in socialist states where no land markets exist (e.g. case of Moscow).

In the paper quoted above, Bertaud puts forward the argument that in the case of large metropolitan cities, the urban spatial structure is the possible cause of labour market's consolidation or fragmentation. He further states that any shape whose effect would be to fragment labour markets would not be viable in the long run. He argues that a viable type of urban structure should therefore allow complete labour mobility within a metropolitan area. Households, whatever their location within the metropolitan area, should be able to reach within a reasonable time (say less than 1 hour) all the locations where jobs are offered.

Traditionally, the monocentric city has been the model most widely used to analyse the spatial organization of cities. The works of Alonso (1964), Muth (1969), and Mills (1972) on density gradients in metropolitan areas are based on the hypothesis of a monocentric city.

Over the years, the structure of many cities departed from the mono-centric model as many trip-generating activities were spread in clusters over a wide area outside the traditional CBD. It may be observed that large cities are not born polycentric; they evolve in that direction with various circumstances accelerating the mutation.

Another important factor highlighted by Bertaud is that a polycentric city is not an aggregation of self-sufficient 'urban villages', with a self-sufficient community growing around each cluster of employment, as planners often like to believe and propagate, as this urban structure contradicts the only valid reason of the existence of large metropolises: the increasing returns obtained from large integrated labour markets. The urban village concept is the ultimate fragmentation of the urban labour market. He argues, that in reality, all polycentric cities function very much in the same way as a monocentric city: jobs wherever they are, attract people from all over the city. The only difference is in trip distribution, as trips tend to show a wide dispersion of origin and destination, appearing almost random.

The correlation between the polycentric city model and urban land values establishes that **'for a given point in the city, the shorter the sum of trips to all potential destinations, the higher should be the value of land.'** Thus, polycentric cities also have a negatively sloped density gradient, like mono-centric cities, but not necessarily centred at the CBD but on the geometric centre of gravity of the urbanized area. The slope of the gradient should also be flatter, as is observed in distinctly polycentric cities like Los Angeles and Atlanta.

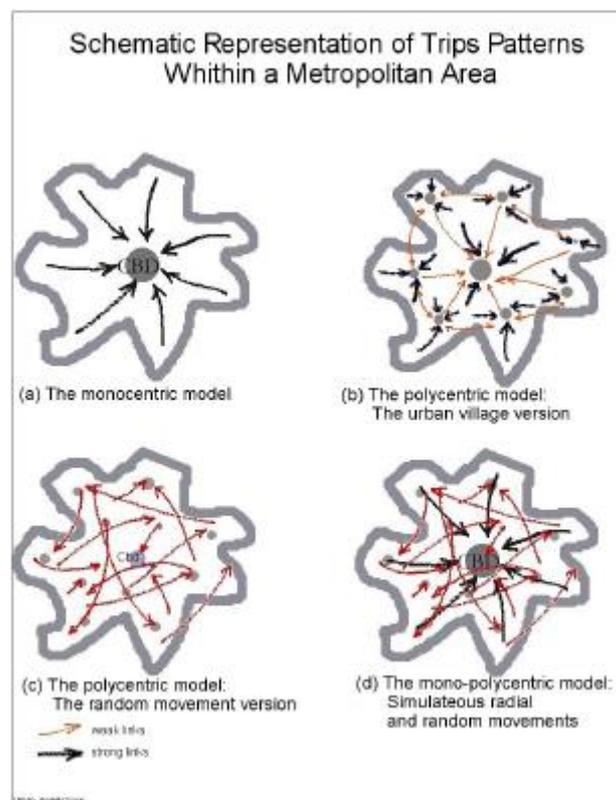


Figure 1: Pattern of daily trips Source: Alain Bertaud

The other significant aspect discussed by Bertaud is the consumption of land in urban areas, which is measured by the densities of cities. Density is often measured as population divided by an administrative boundary. Bertaud argues that this measure of density is not very useful as municipal limits may include a large amount of vacant land, water bodies etc. **'The only meaningful measure of density is to divide population by the built up area consumed by urban activities.'**

The density profile of a city shows the distribution of population within a metropolitan area. In the large majority of cities, the profile of density from the centre point is a negatively sloped exponential curve, predicted by the model developed by Alonso, Mills and Muth.

A related aspect, relevant to most developing nations including India is the effect of urban spatial structure on the welfare of the urban poor. In India, where the poor cannot afford individual means of transport, dense monocentric cities are more favourable as they reduce travel distance to work place and allow a more efficient network of public transport. However, land is usually much more expensive in dense monocentric cities and the urban poor can afford much less land. This leads to creation of inner city slums within the core of the town, where the urban poor occupy sub-grade buildings and live in a poor quality of environment. This is not the focus of the present research, and the thrust shifts to the urban poor who choose to stay in suburban locations far from their work place. The problem in most Indian cities is the absence of public transport to the peripheral locations of the city. The urban poor thus concentrate in pockets serviced by suburban rail, if and when present, and is able to get affordable living units at lower prices. Hence the development of the earlier mentioned band of development in the Kolkata Metropolitan Area along the suburban rail networks.

Thus it can be concluded that in accordance with the classical Bid Rent Theory, each income group will adjust its consumption of land, and hence density, according to the tradeoff between the two vital factors of (i) distance to work and (ii) floor space consumption.

Bertaud further illustrates through a case example that many land use regulations have the effect of segregating the poor in areas which might not be the best for their welfare. Excerpts from the theoretical example are quoted below.

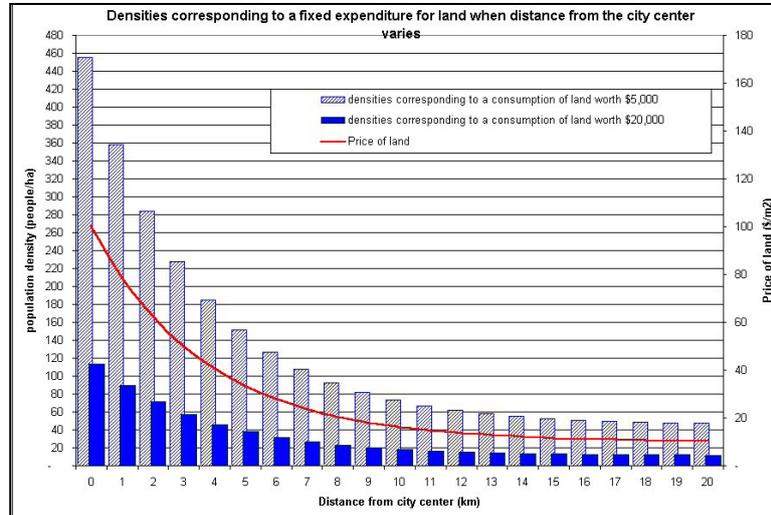


Figure 2: Affordable density by two income groups with distance from the city centre.
Source: Beratud Research

The figure above illustrates that at the same distance from the city centre, the lower income group can afford lesser built space and hence has a higher density, whereas the higher income group can afford more land and built area, and has lesser density, to achieve the average bid rent price of land at that distance.

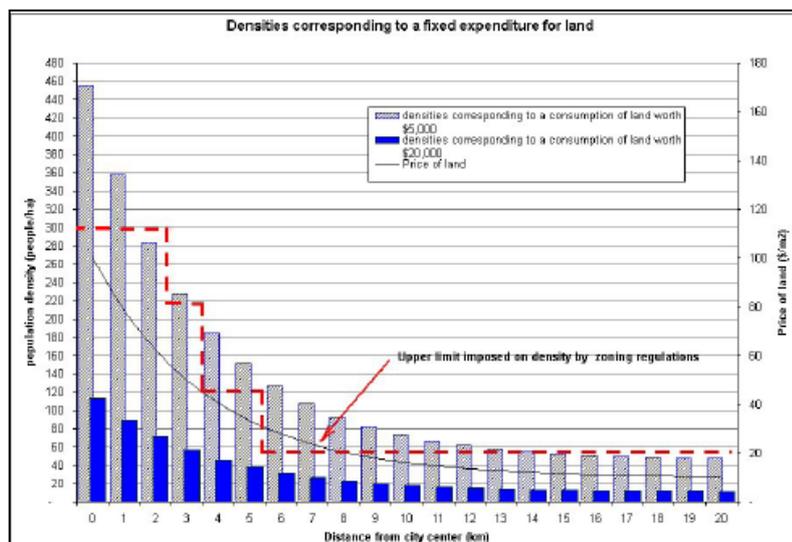


Figure 3: Zoning Restrictions and Affordable densities. Source: Beratud Research

While implementing zoning regulations, most cities set an upper limit for the densities of each zone. The dotted line in red superimposed on the theoretical maximum density graph of the two earlier discussed income groups shows the relation between the permissible density of a zone and the respective income group's affordable density. It is seen that apart from the areas at 3-4 km from the city centre, the lower income group can afford the zoning density only after 14 km distance from the city centre.

Thus, the effect of Zoning regulations often further moves the lower income groups to distant locations. In absence of good public transport, these people tend to find alternate locations in close proximity to the city core and set up informal housing. This leads to the creation of slums and squatters in the city and leaves the periphery as fragmented low density fringes having a transitory character of the semi-urban-rural.

In the backdrop of these theoretical discussions on land and housing dynamics, the Kolkata Metropolitan Area is analysed as a case study and a commentary on its own unique characteristics is developed.

4. The growth of the suburbs of Kolkata Metropolitan Area

Kolkata Metropolitan Area (KMA) is estimated to house a population of about 17 million people in 2011, of which only about 4.5 million live within the city core whose administrative boundary is the city Corporation. The 17 million people are distributed over 1851.41 sq.km. of Kolkata Metropolitan Area, achieving an overall density of about 9000 persons per sq.km. The decadal growth rate of KMA has been constant, hovering around 21-22% for the three decades between 1961 and 1991. There has been a decline in population growth to about 16% for the decade of 1991-2001. During the same period, the decadal growth rate of Kolkata Municipal Corporation (KMC) has progressively declined from 12.39% in 1961-71 to 3.93% in 1991-2001.⁴ This clearly corroborates the fact that KMC has reached its saturation limits and the future growth of the metropolis would continue in the suburbs.

The general pattern of settlements within the Kolkata Metropolitan Area (KMA) suggests a strong linear bias along the river Hooghly, which serves as the central spine of the metropolis. The north – south development axis has been strong, reducing in intensity as the distance from the nucleus of KMC increases. In the east west direction, the cross section of development has historically shown a decline in the density of development from the river outwards, gradually merging with the rural development in the hinterland.

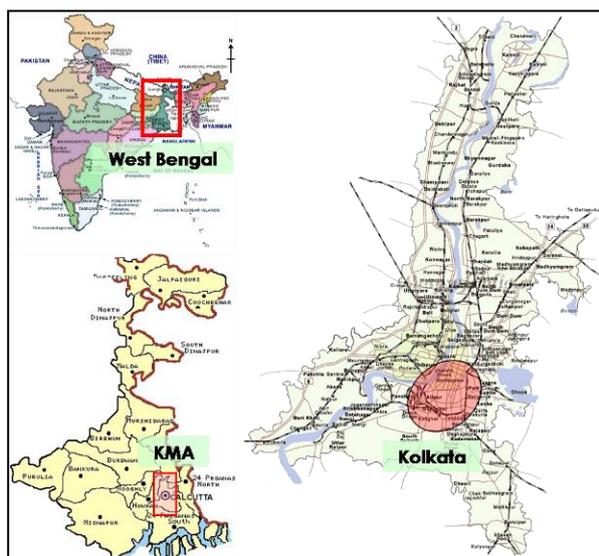


Figure 4: Location and delineation of KMA

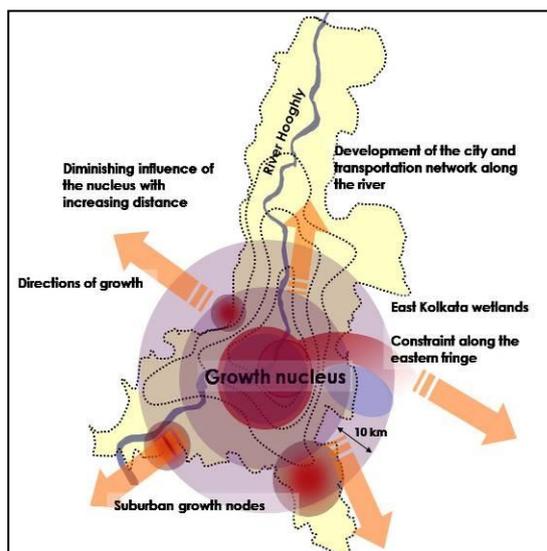


Figure 5: Growth directions of KMA

The Government of West Bengal, the state whose capital is Kolkata, in 1991, discusses the development of Kolkata (erstwhile Calcutta) in a volume 'Calcutta's Urban Future: Agonies from the past and prospects for the Future'. In one of the essays, Monidip Chatterjee explains the pattern of suburbanisation and urban sprawl.⁵The evolution of isolated settlements within the metropolitan area to a continuous band of development over the years was propelled by the introduction of a fairly large network of suburban railway lines, which is a usual suburban growth phenomenon. However, the morphology of these fringe areas is described as 'rural land being divided into small plots for building creating the most effective breeding ground for future urban chaos'. Chatterjee also clearly observes that 'the metropolitan fringe provides a welcome refuge for the vast number of urban poor who are gradually pushed out of the old and established urban core of Calcutta.'

It is worth noting that the phenomenon mentioned in the preceding section was common till the 1990's. Post liberalisation of the Indian economy, with the advent of private developers in the residential supply market, large integrated residential development was mobilised by the developers. Land for such large township-like developments could be found only at the urban fringe and rarely in brown field sites within the city Corporation limits. Thus, the urban poor who used to be pushed out of the city core towards the urban fringes, now had to compete, even for fringe land, with developers, whose paying capacity was much higher and development interest quite different.

5. Correlating the Theoretical Framework of Housing and Urban Land Markets to the context of Kolkata

This research work analyses the Kolkata Metropolitan Area on various parameters which have been discussed in the preceding section on theoretical framework, and attempts to interpret the findings.

5.1 Density Pattern

The Plan Document for KMA, 'Vision 2025, Perspective plan of KMA: 2025' has been referred to as the source of data on densities in various parts of the Metropolitan Area. It is noteworthy that KMA spreading over 1851 sq. km comprises of three city corporations including Kolkata Municipal Corporation, and house about 39% of the population. There are 38 municipal towns, housing about 45% of the population and 77 census towns housing around 7% of the KMA population. A vast chunk of land in KMA is rural (40.31%) but house only 9% of the total population. Given this heterogeneous composition of the Metropolitan

area, it is imperative to understand the variation in densities in the different parts of the metropolitan area.

Density in persons/ha

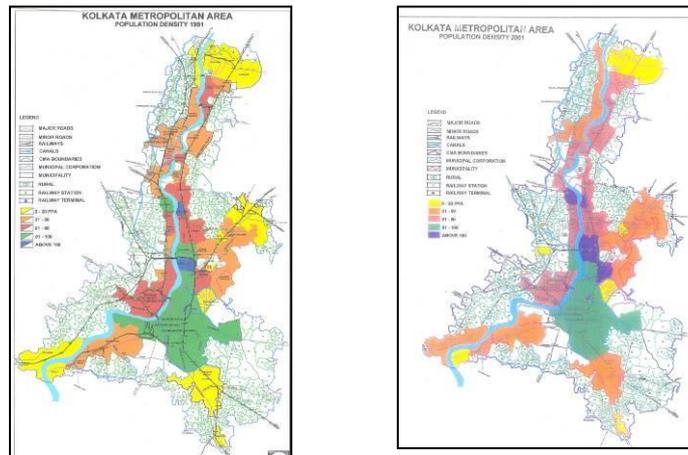


Figure 6: Densities in KMA in 1991 and 2001

The above figure represents the densities in the various urban entities within the KMA. It is seen that in a decade, many of the peripheral urban entities, particularly on the eastern and south eastern fringes have shown an increase in density from around 0-50 persons per hectare, which is the lowest density, to densities of 51-125 persons per hectare. All peripheral locations have shown an increase in density to the next higher range in the decade of 1991 to 2001. It is interesting to note that the large core area of KMA, which is the Kolkata Municipal Corporation area, has shown no change in density and remains dense but stagnant at 201-250 persons per hectare density.

The research, in line with Bertaud’s methods, has computed the density of people on urban built up areas, through image interpretation of LANDSAT images. Three LANDSAT images of 30 meter resolution were used at decadal intervals for around two decades, with the dates of image acquisition being 11 Nov. 1989, 24 Feb. 2002 and 19 Feb. 2009. A Multispectral 7 band (MSS) IMAGE was used to detect the built up areas within KMA boundary. Linear features (roads and railways) were traced and verified using Google Earth imagery.

The KMA boundary was superimposed from drawings made available by KMDA. Taking the existing CBD as centre, concentric rings at 5 km distance are mapped to have a quick reference of the extent of the city’s built up area in different suburban growth directions. The yellow lines traced on the image depict the extent of urban built up area as interpreted from the image.

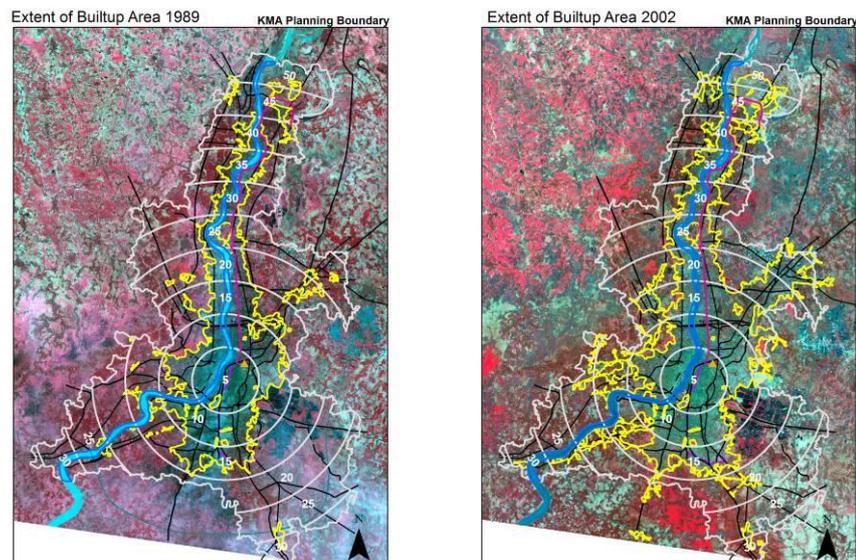
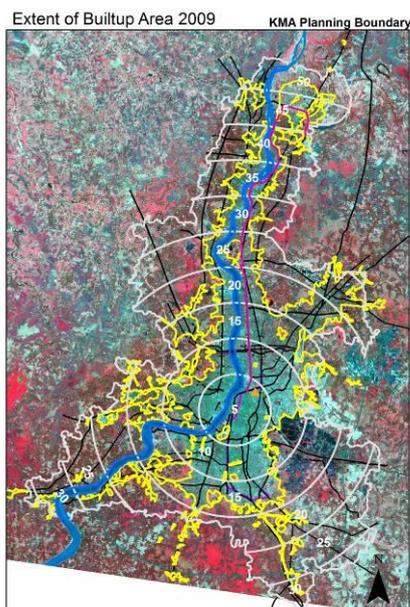


Figure 7a, b, c: LANDSAT image interpretation of Built up area in KMA for 1989, 2002 and 2009.



The key observations which can be interpreted from the images are as follows:

- i. The geometry of the KMA region shows the CBD and the centre of gravity being towards the southern side. The delineated Metropolitan area stretches upto 45 km to the north boundary and barely 15 km to the south boundary.
- ii. Growth in the eastern and south eastern fringes has been significant in the decade 1989 to 2002.
- iii. In the last decade of 2002 to 2009, the settlements have grown southward along two major spines and gone beyond the delineated metropolitan area limit.
- iv. It is evident, that even though the Metropolitan Planning Area has more land on the northward side, with increasing distance from the CBD, the development rate is much slower and restricted to the river edge. The south however has been growing at a faster pace due to its proximity to the CBD with built development even showing signs of going beyond the delineated Planning Area boundary.
- v. The southern and eastern part also has a robust road network along which the development has taken place, in contrast to the north and west, where the suburban rail is the main commuter mode, also explaining a more rigid controlled form of development.

The extent of builtup area and the computed density on built land are shown in the following table:

Year	1989	2002	2009
Population of KMA (in Millions)	12.64*	14.72*	17*
Urban Built up Area (in Sq. km)	461	704	738
Population Density on built up area in Persons/sq.km	27,418	20,909	23,035

*Population numbers used here are the ones available from the closest Census enumeration years of 1991, 2001 and 2011.

Thus the density of people on built area is as high as 23,000 persons per sq.km as against the figure of 9000 persons per sq.km when overall density of KMA is computed for the same population.

The burdens on the development corridors in the suburban areas can be understood, as the growth in the city corporation area has been stagnant. The rural hinterland does see sporadic development, but it is the urban peripheries which bear the burden of these extraordinary density figures.

5.2 Residential Development and Land markets

An analysis of the pattern of development in recent years shows significant development on some transport corridors in the south and south eastern periphery. The land price gradient on all these corridors and the nature of residential development along them form a part of a larger research. In this paper, some cases have been documented to give an overview of the transformations taking place at the fringes.

The phenomenon of urban development in all the peripheral corridors can be broadly classified into three types of development:

- i. Land conversion of agricultural land to residential use followed by subdivision into small plots for individual residential development. Land prices are low compared to core city areas for the two reasons of distant location with poor accessibility to city and absence of planned infrastructure (drains, sewer lines, electricity etc.).
- ii. Organised residential townships developed by the Government agencies- the metropolitan development authority, state housing boards being the major players. These developments would bring with them infrastructure development in phases and the accessibility of the entire area would increase. Being welfare projects, the mix of plots and housing units would include all income groups and work on the principle of cross subsidy to ensure availability of plots to the lower income groups of population as well. While the drawback of this model was the slow rate of progress, the benefits to the city's population were many, and most of the organized housing was developed in this way till the early 1990's.
- iii. In recent years, post liberalization, the private sector has been included as an actor in the urban development process. These developments work on a maximum profit basis. Thus they situate themselves in places of lowest land cost and with basic trunk infrastructure and then create islands of gated communities predominantly for the middle and upper segments of the population. These developments disrupt the socio-economic profile of the surroundings as they usually come up in low income suburbs. The residents usually have their own transport and hence do not need to interact with the immediate community at all. All amenities are provided within the gated community and they are isolated paradise islands. These islands create social divides and increase the land values in the surroundings, without giving any direct benefits.

6. Character of the Peripheral Residential Development in Kolkata

The change in morphology in one area surrounding these large residential developments in the fringe areas has been documented through archived images of Google Earth.

Case Study: East Kolkata Township- a large area developed by Kolkata Metropolitan Development Authority (KMDA).

Year of project initiation: 1976 Year of completion: Developed in phases from 1990s.

Total project Area: 315 hectares (approx.) Distance from CBD: 7 to 10 km on Eastern Fringe

Figure 8 a. East Kolkata Township in 2002.

- Government institutional group housing projects completed.
- Large number of vacant land parcels
- Surrounding area on eastern periphery rural in character with sporadic loosely strung development

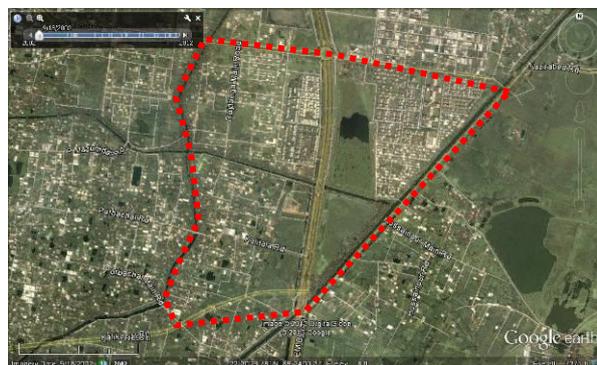


Figure 8 b. East Kolkata Township in 2009.

- Most vacant plots developed.
- Private developers and joint venture companies have developed many gated housing colonies, largely for the middle and upper income groups.
- Many institutions developed on commercial plots

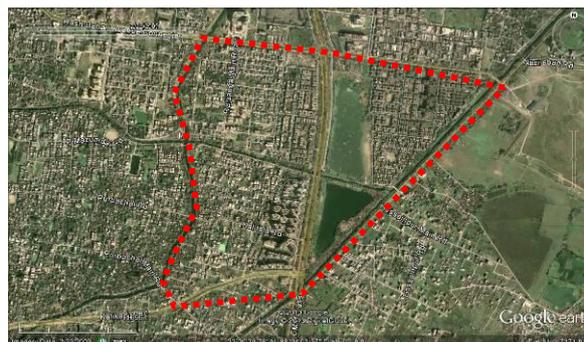


Figure 8 c. East Kolkata Township in 2012

- East Kolkata Township has almost totally developed as a major residential suburb with public transport, schools, hospitals and other social amenities.
- Areas on the east beyond the township area have shown escalated growth, as lower and middle income plotted developments, benefitting from the locational proximity to East Kolkata Township



Property prices in this area were collected from various real estate broker firms and published market scans were referred to obtain old data. The prices of the development in this zone are as follows:

	2002	2009	2012
Typology wise rates in East Kolkata Township and its surroundings	Sale rate in INR/sft	Sale rate in INR/sft	Sale rate in INR/sft
Housing Complexes	1500-1600	3000-3500	5000-7000
Stand alone apartments	1300-1400	2200-2800	4500-5000
Apartments one block behind	1100-1200	1800-2000	3500-4500

- The rate of escalation in housing complexes from 2002 to 2009 was at an average annual rate of around 16%, whereas for the period of 2009-12, the annual rate of appreciation has been around 33%.
- In case of the stand alone apartments, the appreciation in the earlier time span was in the range of 14% annually, and in the next span it was around 26% annually.
- In case of the apartment blocks one block behind, the appreciation was less than 10% annually in the first few years. In the second phase, the appreciation has been the highest in the range of 40% annually.

These observations are significant in revealing the transformation which takes place outside the planned development. With the East Kolkata Township saturated and complete with amenities, the price of residential units around escalate, as they are in high demand due to their proximity to all amenities. The rental rates here are even higher and the people having older houses are seen to renovate them to utilize the full FAR, to capitalize the rental potential.

It is interesting to note that around the late 1980's and early 90's, at the time of introduction of the neoliberal policies, a large private development was sanctioned by the State

Government a block beyond the East Kolkata Township. This township was a high end development meant as a second home for non-resident Indians (NRI) wishing to have a house in their homeland. The 65 acre township is being developed by a consortium of six developers and the land was obtained on lease from the State Government around 2006-2008, at a lease rent of 233 million INR, which was a paltry sum of 3.5 million per acre. Around the same time, other smaller land parcels were transacted in the neighbourhood of the project at around 5.5 million INR per acre. The project has 6 high end residential towers of 75 stories each and is currently being marketed at a price of INR 8000-8500/sq.ft. of built space.

It is ironic that the government in its role as developer had been just and fair and the projects developed by the Government had served the purpose of providing shelter to all. With the change in role of the government, from developer to facilitator, the Government has interpreted its role only as a land broker, leaving the onus of provision of housing solely to the private sector. In such circumstances, in developing countries like India, where the higher income groups also had few products on the shelf to choose from, the private developers would prefer to make huge profits and cater to the highest income group alone.

7. Emergence of a Divided City: causes and consequences

The conflict which arises is in the competition for precious land in the same fringe areas, as documented in the above mentioned case study. In the earlier stages of socialist development, normal market forces would push the lower income residents to the fringes, with Government giving infrastructure at later stages. Post liberalization of the economy, the demand for land in the fringes has increased, with developers seeking to develop high end residential enclaves in these areas, to minimize on cost of land and thereby maximize profits. This distorts the classic bid-rent curve of land prices, and generates smaller peaks at the periphery as well. The fallacy of this entire development is the increasing gap in housing for the lower income groups. Where are they living? How are they affording for urban housing? The creation of informal settlements in more prime locations and creation of slums in dilapidated inner city areas is a distinct possibility, thereby removing the lower income population from the formal housing markets. Along with it is the process of creation of 'reverse ghettos' of opulence amidst the seas of lower income sprawl at the fringes.

To conclude in the words of Amitabh Kundu,⁷ 'a switch over from planning to free market, therefore, has not given any impetus to urban growth'....'This has only helped institutionalize disparity and strengthen the process of segmentation of the cities into rich and poor colonies'.

References:

1. Ahmed, Waquar, Kundu, Amitabh, Peet, Richard, eds. (2010) India's New Economic Policy- A Critical Analysis, New York: Routledge.
2. Kundu, Amitabh (2010) "Urban System in India: Trends, Economic Base, Governance, and a Perspective of Growth under Globalization", India's New Economic Policy- A Critical Analysis, New York: Routledge.
3. Bertaud, Alain (2004) "The spatial organization of cities: Deliberate outcome or unforeseen consequence?", retrieved July 18, 2012, from http://alainbertaud.com/wp-content/uploads/2013/06/AB_The_spatial_organization_of_cities_Version_31.pdf.
4. Vision 2025: Perspective Plan Of KMA: 2025 (2005) Kolkata: KMDA
5. Chatterjee, Monidip (1991) "Settlement Pattern in the Calcutta Metropolitan Area- A Futuristic Vision", Calcutta's Urban Future: Agonies from the Past and Prospects for the Future, Kolkata: Government of West Bengal.

Urban Agriculture as a Socially Inclusive and Sustainable Post-Growth Urban Regeneration Strategy

Bruno MONARDO, "Sapienza" University of Rome, Italy
Enrica POLIZZI DI SORRENTINO, "Sapienza" University of Rome, Italy
Enzo FALCO, "Sapienza" University of Rome, Italy
Alessia FERRETTI, "Sapienza" University of Rome, Italy
Alessandro BOCA, "Sapienza" University of Rome, Italy

Synopsis

The experience of "*New Roots Community Farm*" within the distressed neighborhood of City Heights in San Diego shows how the "Urban Agriculture" approach can provide new integrated strategies for urban regeneration matching social inclusion and physical-economic redevelopment.

1. Urban Agriculture and social inclusion: what role in regenerating cities?

Can the "Urban Agriculture" approach, within the wider framework of "Healthy food policies", innovate urban regeneration strategies and tools while pursuing a virtuous scenario in terms of social inclusion?

Not just a rhetoric question that the authors have been facing, together with a larger group of European and US researchers, since the beginning of a EU FP7 Marie Curie Research Project, still in progress, focused on innovative tools in urban regeneration strategies¹. No doubt it is a quite complex issue and a relevant research challenge, nevertheless it will be argued that it is possible to be moderately optimistic for a satisfying and positive response, but only by matching specific conditions.

Urban redevelopment within economic crisis cities is a contemporary major challenge for public administrations, private investors as well as the increasing kaleidoscope of socially driven stakeholders. However, the imperative of pursuing inclusive urban strategies facing the exponential rising of migration phenomena have been rarely connected to the issue of limiting land consumption and boosting economic, physical and social regeneration in most developed countries. Only fairly recently within the general framework of "urban-rural" relationships, "Urban Agriculture" is emerging as a practice which could prove successful both for giving new perspectives to blighted zones of the post-crisis cities and for tackling social malaise related to the massive migration phenomenon in western economy metropolitan areas.

This paper is focused on reflecting on and assessing how and to what extent Urban Agriculture can drive innovation in urban regeneration strategies, not only in physical and economic terms, but also and mostly in a social cohesion perspective. A specific case study of an integrated initiative run by a non-profit organization in San Diego (State of California), is discussed in order to support such a scenario. The "*New Roots Community Farm*" initiative –

located in a “patchwork community” of immigrants, the distressed neighborhood of City Heights – seems to be particularly significant for its aim of revitalizing “rurban” spaces through the involvement of refugee groups in urban farming, community garden care and the potential of an interesting “chain” of connected activities. The whole neighborhood is considered a “critical food access” area and the main turbine of the initiative, an international non-profit organization, the International Rescue Committee (IRC), worked with other community-based associations, the City of San Diego and the San Diego County Farm Bureau to develop the project on public vacant land.

2. “Healthy food” issue in United States

Across the US, a growing consumer demand for fresh, local, and healthy food is creating new markets for urban food production. Many of these efforts specifically address the need of urban residents who are living in low-income neighborhood to access food. The wider framework such programs are embedded in is to be found in healthy food policies and correct eating habits as a way to tackle serious social illnesses such as high rates of obesity, diabetes and cardiovascular diseases.

Although US food production is far more than sufficient – doubling and tripling consumer’s needs (Nestle, 2007) – the intertwining of malnutrition and access to fresh and healthy food is the main issue at stake. Indeed, not only researches demonstrate the correlation between individual’s health behavior and the social and physical surroundings, but specifically show a relationship between malnutrition diseases and low-income neighborhoods (Morland, 2002). The lack of supermarkets and grocery stores selling affordable, fresh, healthy food may have substantial impact on low-income and minority communities to have equal access to food (Morland, 2006; Flegal, 2002).

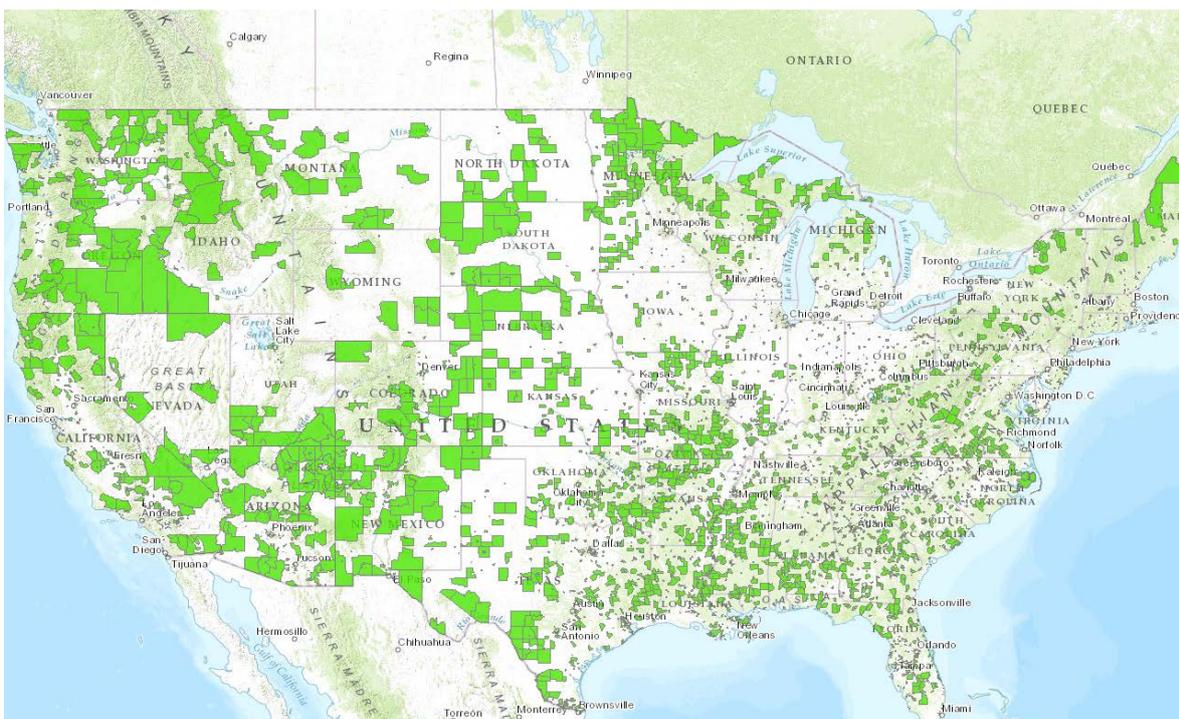


Figure 1: Food Deserts in USA; Source: USDA

Critical food access areas are often identified as *food deserts*, areas “with limited access to affordable and nutritious food”², or *food swamps*, marked by the abundance of unhealthy food sources such as fast-food restaurants and convenience stores. Under USDA criteria defining food deserts³, “about 10 percent of the 65,000 census tracts in the United States meet the definition of a food desert. These food desert tracts contain 13.5 million people with low access to sources of healthful food. The majority of this population — 82 percent — lives in urban areas⁴.”

In this context, the United States is the forefront of community based agricultural and rural practices, not only for the achievement of urban physical regeneration objectives, but also in consideration of the social integration and economic development targets that such initiatives aim to attain. In fact, together with the most known community gardens and retail farms, there is a wide variety of different activities linked to agricultural production and fresh produce which vary from job creation with “commercial kitchens”, food business incubators to specific educational and growing activities and training on culinary arts.

Planning agencies, both at local and regional level, are increasingly using urban and regional plans to address food system issues in a sustainable way. Among them, urban agriculture is one of the topics identified as an “innovative” tool to enhance the food system, economically, environmentally and socially. Defined by Bailkey and Nasr (2000) as “the growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry in and around cities”⁵, urban agriculture includes a number of different initiatives both green- and brown-field. These projects are often inspired by non-profit organizations with a variety of goals, including health and environmental issues, job and income creation as well as the development of entrepreneurial skills and the regeneration of distressed neighborhoods. Indeed, as cities spread into suburbs, inner-city buildings and lots are being abandoned or demolished: urban agriculture brings vacant parcels of land back to a productive use in an alternative food supply mechanisms.

2.1 California and San Diego

In the State of California, especially large metropolitan areas are making foodshed assessments to plan for specific interventions. Recently San Francisco, Los Angeles and San Diego are easing procedures and changing plans and zoning codes to include Urban Agriculture. In particular, and as part of the revived attention to healthy food, the *Building Healthy Communities Initiative* granted funds to start the San Diego County Food System Alliance in March 2012. The Alliance's objectives are to strengthen local farms and improve access to good and healthy local food by improving infrastructure and regional food distribution.

Therefore, the Urban Agriculture theme in San Diego is currently very much debated within the wider political framework and cultural shift toward more healthy eating habits and food, especially in low-income communities. Urban Agriculture in its various forms may therefore be seen as a complementary, concurrent element, if not a trigger itself, of economic and social regeneration initiatives in blighted areas and distressed communities. Actions and initiatives related to Urban Agriculture take different forms and are institutionally recognized by the city of San Diego within the municipal code and the zoning code after the amendments adopted in January 2012 which have been funded through a \$50,000 grant provided by the *County of San Diego Health and Human Service Agency* with the aim of increasing access to healthy, local and sustainable nutrition style.

These amendments and new regulations have introduced important novelties and opportunities for Urban Agriculture. Firstly, the introduction within the General Plan of two new categories “Farmers Markets” and “Retail Farms”. Secondly, losing the restrictions on

the keeping of chickens, goats and bees either city wide or in single-family areas and minor amendments to community gardens regulations. Land uses within Urban Agriculture therefore regard *community gardens* and *backyard gardens* mainly for self-consumption and commercial urban farms for production and selling.

Within the amended general plan in San Diego, Urban Agriculture is defined as “the production of food in and around cities for local consumption”. Specific plan's policies aim at an Urban Agriculture system that should be both economically and environmentally sustainable by:

- encouraging the use of specific Urban Agriculture techniques that require reduced land and water use;
- recognizing the cultural and economic benefits of providing opportunities for residents to grow healthy, affordable, culturally appropriate foods;
- developing land development regulations that allow Urban Agriculture uses in appropriate locations and increase opportunities for farmers markets on public and private lands;
- encouraging Urban Agriculture land use in underutilized vacant plots and peri-urban areas;
- exploring potential location for Urban Agriculture land use as part of a long range plan.

3. Method approach and cultural positions

The specific study the present paper is dealing with, has been conducted within a broader investigation⁶ on urban regeneration tools and strategies in the United States, which takes into consideration economic, social and environmental aspects in order to achieve a sustainable and “smart” perspective on cities. Considering the adopted holistic approach to the research and in order to explore the multifaceted nature of the issue, we followed a “grounded theory” approach to fully explore the complexity of the investigation, both at theoretical and empirical level. We adopted this approach both for the whole research model and for case study methodology in order to support the inductive rationale and adjust research hypothesis.

Following the bottom up process, quantitative and qualitative data were collected through several methods and different sources (Glaser and Strauss 1967). This initial empirical investigation is necessary to avoid basing hypothesis on theoretical grounds, and allows for unexpected results to emerge from the investigation process itself.

First of all, a statistical analysis on selected Census Bureau tracts was needed in order to identify useful data on the demographic, social and economic situation of the city of San Diego and its diverse neighborhoods. A review of community plans, regeneration initiatives, zoning and land use were used to layer the planning perspective and define the critical mass of the urban fabric.

At the same time, qualitative data were gathered from interviews with selected stakeholders acting at neighborhood, city and county level, in order to fully understand the complex scaling and intertwining of different driving forces. Municipalities and other local authorities, as well as nonprofit organizations, community-based associations and private bodies were involved to recognize the complex partnership architecture of the phenomenon.

The gradual re-emergence of urban food production can be regarded as a relatively innovative form of urban regeneration able to bring about physical as well as social change.

In fact, urban gardens existed as far back as the early 19th century in England as a way to meet the demand of new immigrant rural workers for urban allotments which were to support low wages and family income (Martin and Mardsen 1999). In the United States, high unemployment rates were tackled through garden programs in the late 19th century in Detroit (Lawson, 2005) and victory gardens were boosted from the government to respond to food shortages during World Wars., Gardens were intended to both provide food and employment but also to assimilate recent immigrants (McClintock, 2010). Today, Urban Agriculture refers to the “growing, processing, and distribution of food and other products through intensive plant cultivation and animal husbandry” in and around cities within the cores of metropolitan areas and at their edges. It is a complex activity, addressing issues central to community food security, involving also recreation and leisure, economic revitalization, health and well-being, beautification and environmental protection (Brown and Carter, 2003).

The influence of Urban Agriculture and community gardens within the literature is described as three-fold; firstly, the ability of promoting sustainability, both physical and ecological; secondly, the socio-cultural potential of community gardens which provide a place for communities to gather, interact and share knowledge and experiences; thirdly, their contribution to education and career development of young adults as well as those adult segments of the population willing to undertake new business activities (Stocker and Barnett, 1998).

Generally, advocates of Urban Agriculture (Smit and Nasr, 1992; Kaufman and Bailkey, 2000; Mougeot, 2000) envision multiple benefits to cities as:

- reducing the abundant supply of vacant, unproductive publicly owned urban land and so enhancing the image of distressed neighborhoods;
- increasing the amount of neighborhood green space and open areas with positive ecological impacts;
- supplying low-income residents with healthier and more nutritious food;
- reducing food insecurity and by improving food intake of households and developing more pride and self-sufficiency among inner-city residents.

On the other hand, detractors identify a series of impediments to the successful implementation of Urban Agriculture projects, which however appear to be more of external limitations rather than limits of the practice itself (Smit, 2001; Kaufman and Bailkey, 2000). Within them are underlined:

- cost and contamination of inner city vacant land;
- lack of resources made available by government agencies and organizations as well as little, if any, commitment to support Urban Agriculture from city officials;
- lack of know-how within communities to cultivate land and grown food;
- difficulties such as vandalism, shortage of staff and lack of market opportunities;
- Urban Agriculture as being aesthetically inappropriate in the city, causing pollution and being anti-hygienic.

Nonetheless, not only a growing number of committees (especially the Community Food Security Coalition) is devoted to respond to these issues, but also planners are more involved in making connection between urban agriculture and the larger food system, as dependent on economic, environmental and social resources (Hodgson, 2011).

For the scope of this work, social benefits of Urban Agriculture were especially taken into consideration. Community involvement in Urban Agriculture’s initiatives provides opportunities for environmental awareness and nutritional education, as well as for social

interaction across diverse range of cultures and age groups, including minorities and immigrant farmers.

Indeed, “Urban Agriculture has always been enriched by the skills and technologies of immigrant populations” (Brown and Carter, 2003), that might already have experience and knowledge of raising and preserving food. In addition, they may bring also new crops from their native countries, providing market niches for cultural food to the benefits of both the host and other countries (Smit, 2001). Because immigrants and ethnic minorities often resides in low-income neighborhoods where accessibility to food is critical, they might become a fundamental resource for fostering and enhancing Urban Agriculture culture.

4. Case study overview

The potential of Urban Agriculture was specifically explored through the investigation of a fundamental case study in San Diego County, California, as it has greatly contributed to the establishment of Urban Agriculture in the city of San Diego as a practice for social as well as economic and physical regeneration. The “New Roots Community Farm” project, managed by the International Rescue Committee (IRC) and located in the neighborhood of City Heights in the eastern part of the city, is most interesting because of the full involvement within the local communities of a group of refugees for the implementation and management of a community garden and connected activities. The case is particularly concerned with the social aspect of regeneration, which involves integration and inclusion of the poor and marginalized, being directed to refugees and former farmers in their country of origin with a wider social impact that represents the main objective of the initiative and whose virtuous effects on the multifaceted local community should not be underestimated.

The discussion of the case study shows how a single Urban Agriculture initiative, carried out by a non-profit organization for a particular target of immigrants, empowers these new residents as producers, consumers and vendors of healthy fresh food and builds local economic development.

Through an intense collaboration with local authorities and other community-based associations, in 2009 the project started on a 2.3 acres land with 85 families participating, and its successful results are now being replicated by IRC nationwide as a way to tackle food insecurity, health problems, and economic hardship through community-based food and farming projects.

The project garnered national media coverage since the visit and the “endorsement” of the First Lady, Michelle Obama, in 2010, as it is considered the first attempt to establish new community gardens legislation in San Diego and, more generally, a new food-related trend especially in low-income neighborhoods. Following a “place-based” strategy, the “New



Figure 2. Michelle Obama visiting the New Roots Community Garden, Chollas Creek, San Diego 2010. AP Photo.

Roots” project attempts to connect a rural framework into an urban redevelopment policy.

4.1 The neighborhood of City Heights

City Heights is one of the largest and most populated neighborhoods of San Diego and it has historically been destination for immigrant communities. Flows of refugees started in 1974 with Vietnamese – followed by Cambodians and Laotians - and continued in the 80's and '90 with resettlements of immigrants from civil wars in Central America, former Yugoslavia and Iraq. At the beginning of 2000 immigrants arrived in City Heights from East Africa, and according to the Census data review 44 percent of the neighborhood's population was foreign-born by that time.

Demographics of the neighborhood reveal a different framework compared to the average of the city of San Diego and cast light on the history of immigration in the area. The city is populated by Whites for about 60%, with other groups ranging from the 7% of African-Americans and 15% of Asians as other major ethnical groups. City Heights has a 32% white, 15% African-Americans, 16% Asians and 29% of “other races”. Also, as common among many developing countries, the population structure is very young and much concentrated in the 5-35 years old group, which means high birth rates and larger families.

Once a dynamic business neighborhood, City Heights experienced a dramatic change since the late '50 with the openings of large shopping malls that deprived little merchant of costumers. The need to attract shoppers back to City Heights was crucial to the approval of the Mid-City area plan in 1965. Indeed, business interests endorsed the idea of a densification of the neighborhood's residential area to broaden customer base. The substitution of multi-family dwellings for single-family residences and the construction of large complexes of trashy apartments changed the aspect of the neighborhood, with increasing problems of viability, parking and public services.

As the population dynamic dramatically changed since the 70's, grocery stores left both because of high crime rates and the rigidity of full-service grocers and supermarkets supply system, making access to fresh food more difficult. The lack of healthy, fresh and ethnic cultural food in the neighborhood had a significant impact on the livelihood of these communities, most of which were agrarians in their native countries.

A study conducted in 2011 casts light on the fact that the whole neighborhood suffers for being a “critical food access” area as far as supermarket are concerned, both in terms of distance from the nearest full-service grocery, and concerning the available grocery retail space. Access to food has become a major issue in City Heights for at least a couple of reason. Firstly, the lack of affordable fresh and healthy food in a low-income neighborhood, where also issues of public and private transportation means are involved. Secondly, immigrants and refugees are used to “cultural food” which may be very difficult to reach in an already underserved area. This has to be taken in consideration, also because the majority of affordable groceries throughout the whole city of San Diego are of Mexican culinary tradition.

4.2 “New Roots Community Farm” project

Aware of these food-related problems in the area, the International Rescue Committee (IRC) – an important international non-profit organization working on refugee's resettlement in US - came up organizing meetings with communities around the issue. Many immigrant families were suffering from high rates of obesity and other health problems due to the lack of affordable fresh and healthy food.

IRC started a bottom-up process working with refugee communities, residents and local groups to tackle food insecurity and malnutrition. They identified a brown vacant public lot and asked the city to farm that land. Because the City didn't had any policy for urban farming on the ground yet, IRC together with residents and non-profit advocates have focused on finding solutions by promoting land use law changes, community gardens, farmers markets and other grassroots initiatives. Significant, in this sense, was the approval of a city ordinance in January 2012 that dramatically streamlined the city's community garden regulations. After several years of bureaucratic process, in 2009 the City of San Diego approved the project and released an "occupancy permit" on the designated vacant plot.

Since many refugees groups were agrarians in their countries, the strategy was oriented towards a better understanding of market dynamics, business and marketing. The New Roots Community Farm is the first of several initiatives put in action by IRC under the broader umbrella of Food Security and Community Health (FSCH) Program. Other initiatives comprise The New Roots Aqua Farm, an aquaponics system that employs a closed-loop cycle of tilapia farming with hydroponic vegetable growing. The Aqua Farm is also a small incubator farm that gives entrepreneurial residents additional space to grow.

New Roots growers, both of Community and Aqua Farms sell at the City Heights Farmers' Market weekly. Also within the same program, the City Heights Community and Remedy Garden is located in the heart of City Heights with 16 gardening plots for community residents and an herbal medicinal garden, where two high school garden programs train youth in urban farming and food justice advocacy.

The step-by-step strategy is to ensure refugees and residents can get affordable fresh organic food to feed themselves and their families but also to gradually introduce them in the food-business. Training programs are organized by IRC and because the community farm has been certified, they can sell their surplus at City Heights Farmers Market and to restaurants, making it a secondary income of a family, especially for women who generally are more involved. Some farmers have turned this activity into a business through a food business incubator located in Pauma Valley, 50 miles into the San Diego County.

From a micro point of view, the initiative concretely acts to meet its community needs, first of all in terms of food security and nutrition. In a "critical food access area" such as City Heights, farmers not only have land to farm and access to fresh and "cultural" food, but also technical assistance, credit facilities and business training to improve their business knowledge. New Roots locally grown food may allow for households extra-income and for a better diet intake. Training programs improve business capacity building and microenterprises are sustained by a number of IRC facilities.

Broadening the perspective, New Roots has spatially widened its impacts through a step-by-step process and is now a network of initiatives serving communities' needs, developing local economy both within the neighborhood and beyond urban borders.

5. Perspectives and open problems

Closing the circle of these reflections and coming back to the initial question, what are the most interesting findings related to the "New Root" case study for arguing for the role of Urban Agriculture within the general framework of Healthy Food policies for regenerating cities in social, economic, physical and environmental terms?

As we argued in the first part, there is no doubt of the increasing success of "Urban Agriculture" initiatives which are to be considered within the general framework of the so called "Healthy food policy", at the moment a core issue not only for developing countries,

but also in US and in general in OECD Country policies and strategies both at central and local institutional levels.

The San Diego “New Root Community Farm” case-study is somehow emblematic of the capability of setting up a pro-active variety of initiatives in terms of actors, partnerships, social value, community involvement, economic sustainability, mixed functions, new identities. However, it would be an illusion to think that such a “recipe” can be imported “sic et simpliciter” into other contexts. In fact, its relevance as a best practice is obviously related to specific conditions of space, time, civic and juridical culture.

Differently from the European context, nowadays in a US atmosphere, and particularly in California, searching for a post-crisis perspective, it seems to emerge a new horizon of project initiatives with a moderately confident vision for re-boosting local economy and pursuing a “fair redevelopment”. San Diego City has General Plan (2008) which was “awarded” by APA in 2010 for emphasizing the “City of Villages” and the multifaceted community dimension. Its sensitivity for Urban Agriculture approach has been stressed by the last amendments (2012) allowing the spontaneous creation of “Community gardens” and “Retail farms” for encouraging a “new deal” in terms of green, smart and socially inclusive city.

The project quality in terms of complexity assured a relevant potential as a catalyst in terms of urban regeneration in its multifaceted interpretations, emphasizing mostly the social, cultural and symbolic dimension without neglecting the concurrent economic, physical and environmental aspects.

The project is somehow part of a more systemic vision in the priority for a revitalization program of the neighbourhood, already in progress by a local non-profit charity (the Price Foundation) and shared by the “civitas”, the public administration and the majority of local stakeholders.

Referring to the regeneration impacts, the Community garden phenomenon can be considered only the “tip of the iceberg”. More complex “critical mass” can be found in the potential of related activities (farmers’ markets, aqua farms, commercial kitchens, kitchen incubators, culinary art training centers, ethnic groceries and restaurants, connected peri-urban agri-farms) which become more and more socially and also economically relevant and offer new opportunities for the inclusion of immigrants and new forms of social cohesion. The success of the initiative is mirrored through the capability of implementing virtuous forms of dialogue among the fragmented identities of the Community; healthy and ethnic food implications can be a powerful vector in terms of programs and perspectives of social inclusion, pro-active education, limited but socially significant economic rebounds.

On the other hand, the New Roots case and other parallel experiences in US underline some problematic issues, weaknesses and threats.

Sometimes it is evident the risk of delaying or paralyzing the “project cycle” due to “dialogue difficulties” between non-professional proponents (i.e. non-profits) and the public government.

The project follow-up by the public administration has the typical advantages and limits of the “Common law” juridical culture: the public sector is in general a sort of “referee” limiting its action to manage the rules while “waiting” the actor proposals; differently from the “Civic law” culture of some European Countries (France, Italy, partly Spain) the public sector is rarely a sort of “turbine” with a more proactive, leading role).

So, coming back to the initial question about the role of Urban Agriculture strategies for regenerating cities, looking at the lesson of San Diego and at the general dynamics in other US realities, it is possible to say that this approach can take on a concurrent, complementary role with intriguing potential if and only if some specific conditions are respected.

Lands and plots devoted to Urban Agriculture should be conceived and planned as activities in integration and not in competition with the “powerful land-uses” in terms of development rights; looking at a post-crisis horizon it’s not rare realizing that community gardens in the inner parts of cities are quickly going to be replaced by new high density development projects as soon as the economic cycle allows developers to pursue new profits filling “vacant” land resources. On this point of view, a low density urban fabric with a relatively huge amount of vacant “interstitial” land can represent an advantage, keeping together Urban Agriculture patterns, open space systems and denser areas.

Urban Agriculture spaces and connected activities should be conceived and planned as part of the “greening strategy” of settlements. Community gardens, urban farms, farmers’ market areas and so on are to be designed as elements of the open space, complex system with its specific features in terms of public parks, private gardens, urban and peri-urban woods, hydrographical, environmental systems of the city and its metropolitan domain.

References

- Bailkey, M., Nasr, J. (2000) “From brownfields to greenfields: Producing food in North American cities”, *Community Food Security News*, Fall 1999/Winter 2000, p. 6.
- Brown, K., Carter, A. (2003) *Urban Agriculture and Community Food Security in the United States: Farming from the City Center to the Urban Fringe*, Venice, CA: Community Food Security Coalition’s, North American Urban Agriculture Committee.
- Flegal, K. M. (2002) “Prevalence and Trends in Obesity Among US Adults, 1999-2000”, *JAMA: The Journal of the American Medical Association*, vol. 288, no.14 (October), pp. 1723–1727.
- Glaser, B., Strauss, A. (1967) *The Discovery of grounded theory: Strategies for qualitative research*, Chicago: Aldine Publishing Company.
- Hodgson, K., Caton Campbell, M., Bailkey, M. (2011) *Urban agriculture: Growing healthy sustainable places*, Planning advisory service Report 563, Chicago: American Planning Association.
- Kaufman, J., Bailkey, M. (2000) *Farming inside cities: Entrepreneurial urban agriculture in the United States*. Lincoln Institute of Land Policy, Working Paper. Lincoln Institute
- Lawson, L. (2005) *City beautiful: A century of community gardening in America*, Berkeley: University of California Press.
- Martin, R., Mardsen, T. (1999) “Food for urban spaces: The development of Urban food production in England and Wales”, *International Planning Studies*, vol. 4, no. 3 (October), pp. 389-412.
- McClintock, (2010) “Why farm the city? Theorizing urban agriculture through a lens of metabolic rift”, *Cambridge Journal of Regions, Economy and Society*, vol. 3, no. 2, pp. 171-175.
- Morland, K., Wing, S., Diez Roux, A. (2002) “The contextual effect of the local food environment on residents’ diets: The atherosclerosis risk in communities study”, *American Journal of Public Health*, vol. 92, no. 11 (November), pp. 1761-1768.
- Morland, K., Diez Roux, A., Wing, S. (2006) “Supermarkets, other food stores, and obesity: The atherosclerosis risk in communities study”, *American Journal of Preventive Medicine*, vol. 30, no. 4 (April), pp. 33-39.
- Mougeot, L. (2000) “Urban agriculture: Definition, presence, potentials and risks” in Bakker N., Dubbeling M, Gündel S, Sabel-Koschella, U. and de Zeeuw, H. (eds.) *Growing cities*,

growing food: Urban agriculture on the policy agenda, Feldafing, Deutsche Stiftung für internationale Entwicklung (DSE), Zentralstelle für Ernährung und Landwirtschaft.

Nestle, M. (2007) *Food politics: How the food industry influences nutrition and health*, Berkeley, Los Angeles; London: University of California Press.

Stocker, L., Barnett, K. (1998) "The significance and praxis of community-based sustainability projects: Community gardens in western Australia", *Local Environment: The International Journal of Justice and Sustainability*, vol. 3, no. 2, pp. 179-189.

Smit, J., Nasr, J. (1992) 'Urban agriculture for sustainable cities: using wastes and idle land and water bodies as resources', *Environment and Urbanization*, vol. 4, no.2, October, pp. 141-152.

Smit, J., Nasr, J., Ratta, A. (2001) *Urban agriculture: Food, jobs and sustainable cities*, 2001 Edition, The Urban Agriculture Network, Inc.

Notes

¹ This paper is related to the dissemination of the EU research project "CLUDs" (*Commercial Local Urban Districts*), Seventh Framework Programme, Marie Curie Actions People IRSES, 2011-2014, (www.cluds-7fp.unirc.it). The general goal of the CLUDs research project is focused on exploring the potential of new tools for urban regeneration through the strategic role of small retails - handcraft and typical food - in reinforcing the sense of community, reducing transportation costs and contributing to the creation of attractive urban environment, thus increasing private investments. The main axes of the research program deal with the evolution of innovative "Public Private Partnership" forms and "Urban-rural" relationships for regenerating urban deprived areas and their "territorial milieu". The program implementation is based on networking four EU universities (Mediterranea Reggio Calabria, "Sapienza" Roma, Aalto Helsinki, Salford Manchester) and two USA universities (Northeastern University Boston and San Diego State University).

² United States Department of Agriculture (USDA) Farm Bill 2008; in 2011 the USDA definition is: "a low-income census tract where either a substantial number or share of residents has low access to a supermarket or large grocery store".

³ USDA: "Tracts qualify as "low access" tracts if at least 500 persons or 33 percent of their population live more than a mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles)".

⁴ Source: USDA, retrieved on 29 May 2013 from: <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2011/05/0191.xml>

⁵ Quoted in Friedman, E. (2000) "Meanwhile Back at the Ranch", *Health Forum Journal*, Vol. 43 No. 6, (Nov/December), p.6.

⁶ See note 1.

Planning for Health and Sustainability (Low-Fat Cities)

Guy PERRY, IN-VI, Switzerland

ID Number 142

1. Planning for people

The objective of this paper is to demonstrate the increasingly important role that planning and urban design have in fostering the good health of inhabitants of urbanized areas.

While the issues of health of the late 19th century and most of the 20th century were largely related to levels of pollution and contaminants in the air and water, as well as related issues of disease. As populations become wealthier, having access to new technologies and conveniences in the late 20th century and thus far in the 21st, we have new health concerns that are an outgrowth of our new living patterns at the scale of the home, city and regions.

2. Environments for a sedentary lifestyle

Increasingly we live in a technology supported environments. Be it with the convenience of an elevator to go up a building, an automobile to compress horizontal distances, or the Internet to eliminate the notion of distance at all, at least in a virtual world. These modern conveniences are shaping our environment, just as they are shaping us. Yet our bodies have not yet been able to evolve or to be reprogrammed to accommodate our increasingly physically passive lifestyles.

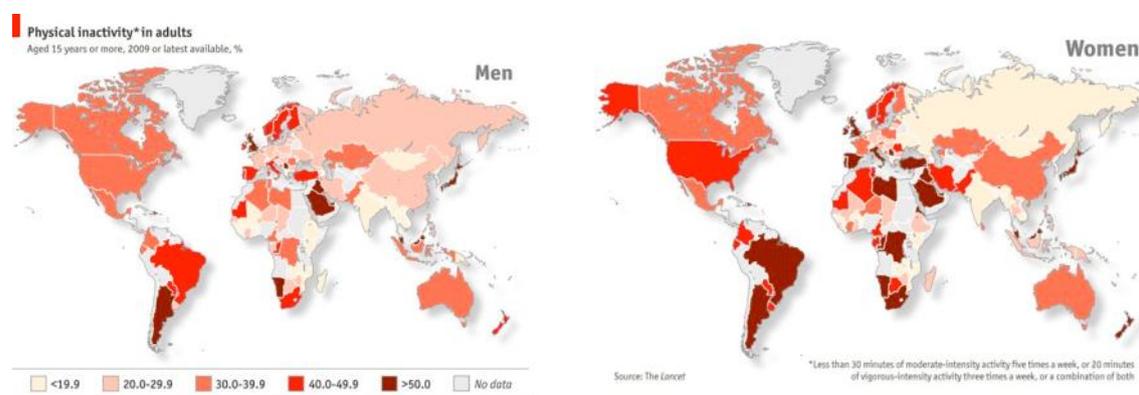


Figure 1: Physical inactivity in adults.

2.1 Increasingly sedentary lifestyle worldwide

Current (2013) research by the NIH (CDC) in the US, UK, China, India and Brazil has charted a precipitous course of an increasingly sedentary population from the last few decades to beyond 2030, that has a direct repercussion on health and well being of humans at a global scale. While increasing work and leisure “screen time” play a significant role in alarming trends of increased obesity, hypertension and diabetes, so does the organization of our physical environment. Our fragmented urban expansion patterns discourage basic living patterns that are healthy for humans and this is especially the case in the expanding areas of cities in rapidly developing countries.

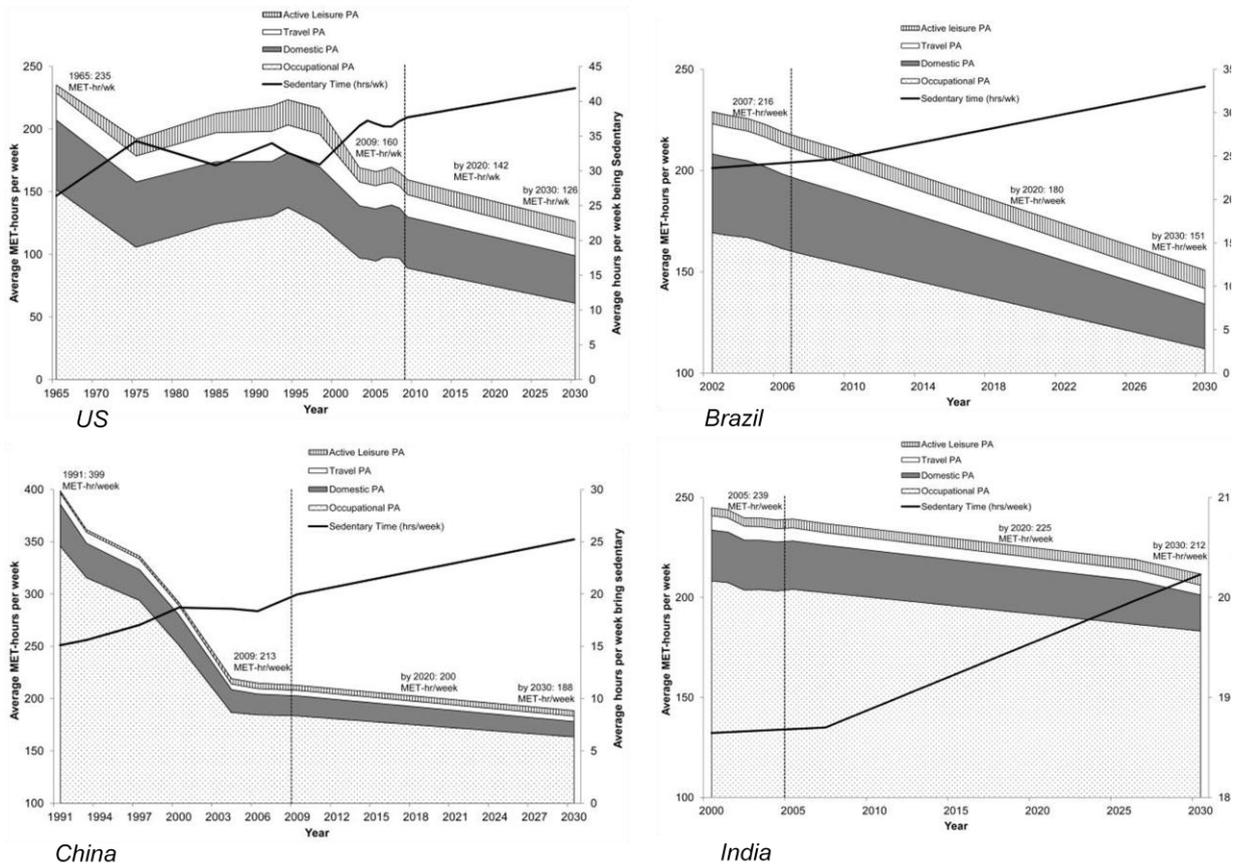


Figure 2: Increasing sedentary lifestyle worldwide.

2.2 Obesity trends in the US and the world

Obesity trends in the US are well known and well documented, although the relationship with physical planning is only beginning to be understood. With 38% of the American population clinically obese, metropolitan areas are now rated as more or less helpful to achieve weight loss. Key factors include: number of people who bike or walk to work instead of driving and access to healthy foods. While planning is not yet perceived as a key part of this equation, both driving time and screen time correlate with increased obesity and related diseases. The US now devotes 17% of GDP to supporting an increasingly unhealthy population.

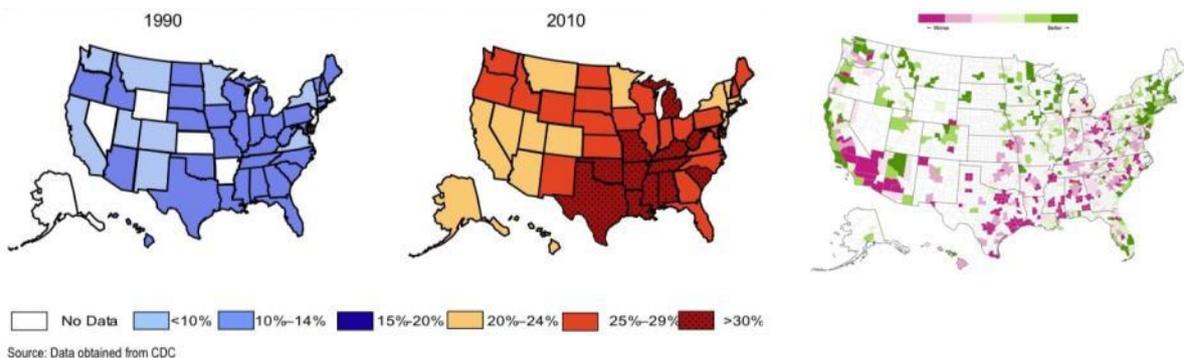


Figure 3: Comparison of obesity trends (in percent) in the US in 1990 and 2010 /left/ Best Metros for Weight Loss /right/

Aspects of a 20th century American lifestyle have been propagated through media and products throughout the world. Television programs like “Dallas”, popular worldwide during the 80’s and 90’s were models of how life would be under capitalism for many transition countries from New Europe to Latin America. A life set between gated compounds, shopping malls, glass office towers.

South Forks is now set in an upper middle class area that has one of the highest school obesity rates in the state. Obesity has less of a link to poverty today, than it had several decades ago. Instead it is increasingly associated with affluent classes. The state of Texas has created a web site, “www.reshapingtexas.org”, which demonstrates the extent to which Americans are aware of their epidemic. Americans now, on average spend over 2 hours each day in their automobile and over 5 hours a day in front of a television or computer screen.

Yet, just as many American’s are becoming more conscious of their unhealthy lifestyles, many rapidly developing countries around the world are now headed in the tracks of the United States of several decades ago. The obesity trend is global. It is a harbinger of other directly related illnesses like diabetes, hypertension and cancer. For example, by 2030 over 25% of UAE citizens will be diabetic and in Brazil 1% more of the population has become obese during each year of the last decade. These trends cannot be explained by changing diets alone.

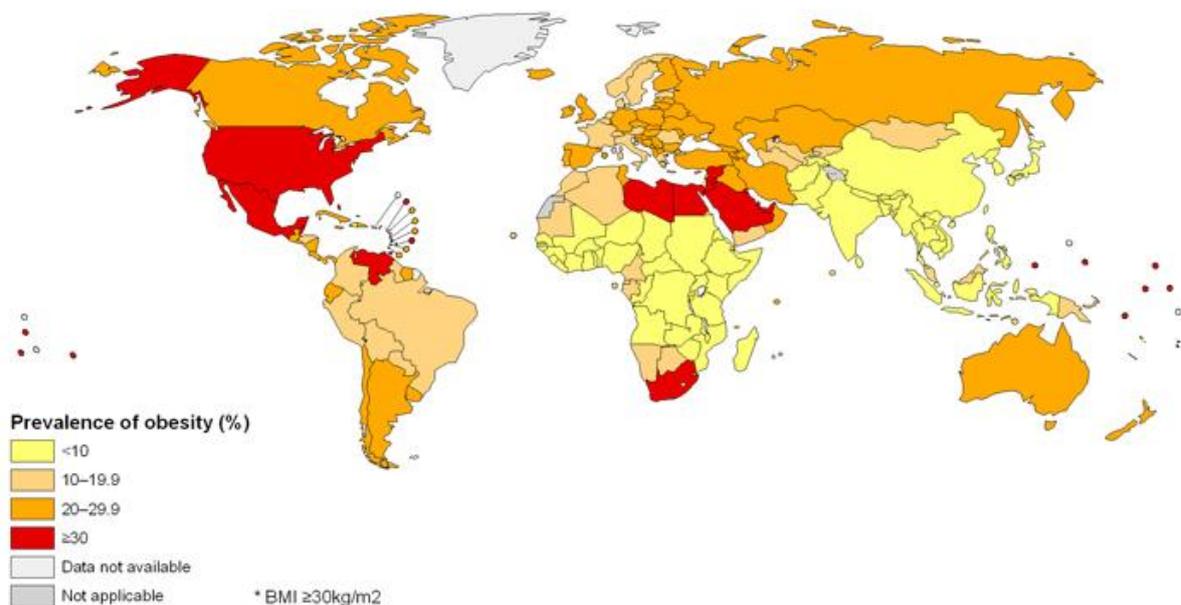


Figure 4: Obesity worldwide.

2.3 Unprecedented Screen Time

Throughout the world, people of all age groups are increasing their screen time: time they spend watching TV or on-line. While Americans remain leaders in Television viewing time, several Asian countries have surpassed the United States in their use of the Internet. The city of Seoul has created a program of “I Will Centers” that have been established to reduce Internet addiction among Children and Adolescents.



Figure 5: Relationship between prevalence of overweight and daily screen time. New headquarter of Facebook.

There is a direct correlation between weight gain and screen time, effectively because of the inactivity that it promotes. It is interesting to observe the kind of isolated urban environment companies like Facebook choose as their home. It is hard to determine whether this is a conscious decision or the pragmatic need for immediate space made possible by the availability of the former Sun Microsystems headquarters. In either case, it is telling of an anti-civic physical world in which the virtual – world may be all too comfortable with.

2.4 Automobile dependence

The United States is perhaps the country most recognized for dependence on the automobile as the main form of short and medium range transport. In addition to averaging over 2 hours a day driving, American cities have largely lost the capacity for allowing people to get around any other way. The lack of density and programmatic diversity within walk able distances simply take waling out of the transport equation. Given that each hour driven per day increases ones chance of being obese by 6%, and each kilometer walked in a day reduces chances of obesity by 7%, it is no wonder that as driving distances extend with the city fabric, that people have trouble keeping their health.

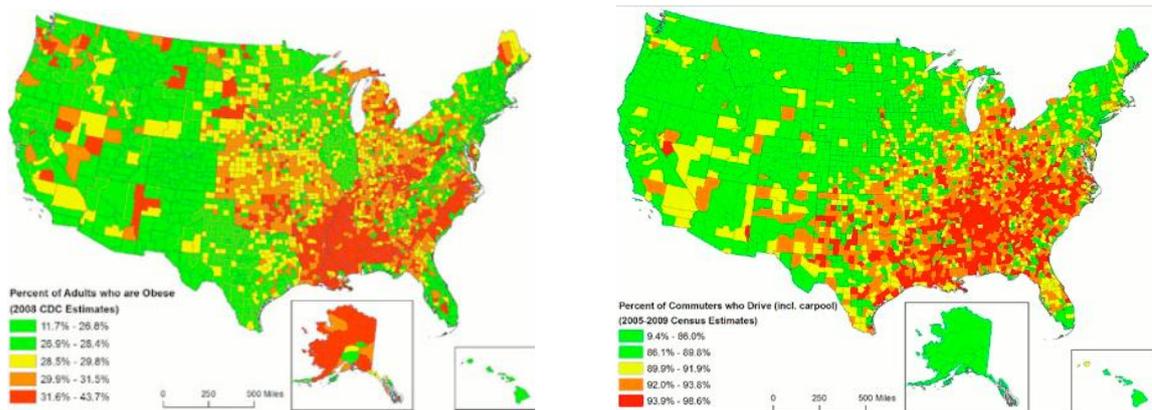


Figure 6: Obesity Rate vs. Driving.

Even new high-density environments China, manage to make their cities, unintentionally, but by design, unfriendly to pedestrian use. Urban edges of “New” European cities fare no better – as if built for automobiles instead of humans. Brazil, with parts the Middle East, are

perhaps are most extreme cases of conscious re-orientation of the urban environment toward the automobile.

Dependence on the automobile and the physical separation of activities has grown at an unprecedented rate in Brazil. For the automobile it is, as with any other country in rapid economic transition: when you can afford to buy one you do. But in Brazil it is also part of official national economic growth policy which might have made some sense during the brief time when Brazil was oil/ethanol autonomous, but now that the growth in number of automobiles has been compounded by the increased distance that they are travelling – a pattern that echoes the United States during the late 20th century, even with increased oil/ethanol production, Brazil cannot keep up with its own domestic demand.

This rise in automobile use has compounded itself in both the urban parts of Brazilian cities and the suburban extensions of those cities. Shopping centers are primarily conceived for those able to arrive by automobile. Prime office buildings have spectacular car lobbies for those who alight from their vehicle. “Urban” apartment buildings anticipate 2 car parking places for a 50 M2 apartment and commonly 4-6 for a 150 M2 or more apartment. The driving restrictions in some cities based on license numbers has had the effect of encouraging households to own more cars, rather than to leave the car at home a day or two of the week.

New homes outside the city also have a standard of 4 to 6 parking places, the assumption being that anyone old enough to drive, needs a car. On the highway from Sao Paulo to Campinas, rest stations reach a new level of integration with daily life: They include multiple banks, shops and restaurants – naturally all drive through.

2.5 Case Studies

Case studies in Brazil and Poland, which analyze existing planning, urban design and living patterns on the urban frontier of cities will serve as a basis. It will examine density, interconnectedness, movement systems, distribution of land uses and microclimates. It will compare specific and intentionally very different urban development projects that attempt to address and remedy the key challenges to health within these urban frontier areas.

3. Brazil / Changing lifestyle in Brazil

In no country has this modern degradation of health been so apparent over the last two decades as in Brazil. A country rightly proud of its ancestral diversity is often said to represent the future of mankind, the ultimate mix of people from all over our planet. Unfortunately, it may also represent another dimension of our future society, that of one that is increasingly sedentary, but not by conscious choice.

Three components of life in Brazil have changed significantly over the last decade: Increased car ownership, Increased numbers of fortress like environments and time spent in front a computer/television screen.

Obesity in Brazilian society has been growing over the past decade at approximately 1% of the population per annum. This is a rate of increase higher than that ever experienced in the US, where 38% of the population is now statistically obese

Diet, usually considered the main culprit in this field, has changed little in Brazil over the last decade and cannot be considered the primary cause for this decline in health.() XXX

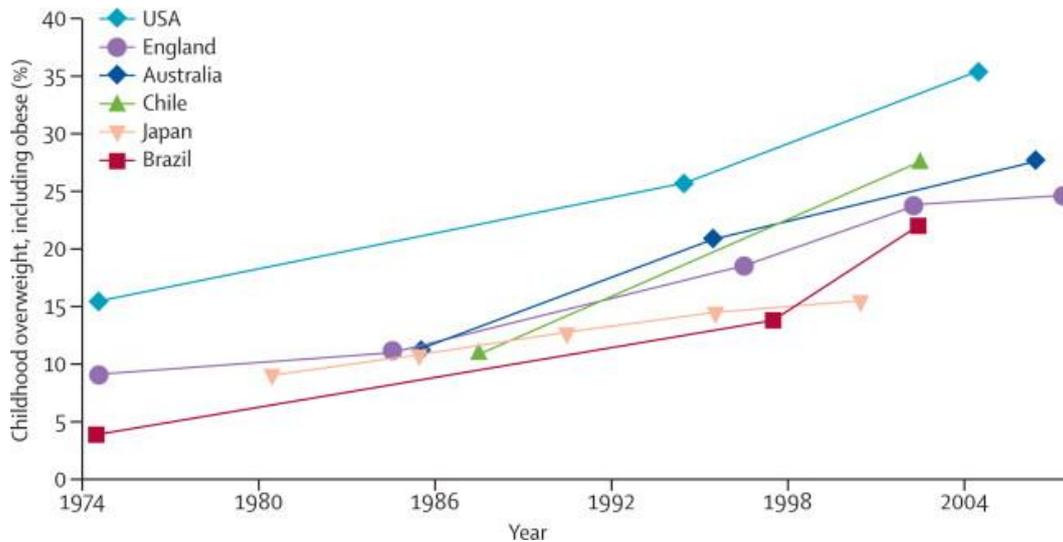


Figure 7: 1% more Brazilians are obese each year during the last decade

3.1 Typical planned urban extension: São José do Rio Preto

A typical example of urban growth may be seen around one of Sao Paulo's satellite cities: Sao Jose do Rio Preto. Following in the footsteps of the Alphaville model, a master-planned series of gated communities pioneered during the 1970's.

Their major sales point is security, in a presumably dangerous environment. They provide a checklist of secondary features like a central green space and athletic areas, usually a football pitch, tennis court and a pool. Lots are sold with building guidelines that allow for a very tight, if sometimes incoherent, build-out. Although the surface coverage of the lots is very high, there is no effort to create a pedestrian scale to the streetscape. In most projects, it is up to the owner of the lot to build a sidewalk, or not. For this reason, it is common for 20 year-old developments of this kind to not have a completed sidewalk network. Some gated communities do away with sidewalks altogether. Cycling paths are a rarity. Streets are broad to privilege driving, even within the community.

The height of the walls both around these communities and between homes is typically 3 to 4 meters. Given the Brazilian climate, this has the effect of cutting off the natural breezes that make much of Brazil such a comfortable climate to inhabit. Once that breeze is taken out of the ambient temperature equation residents are obliged to air condition their environments in order to live comfortably. Temperatures are further increased by a majority of paved public spaces and a very high construction ratio within each building lot.

So much is done to keep the residents from walking within these compounds. With the imposing walls around and gates to enter the communities it is even less imaginable to venture out on foot or bicycle outside the communities.

The net effect is twofold regarding the sedentary nature of life in these places: The dependence on the automobile for any activities outside the home and the deserted character of the neighborhood for residents of all ages. It is simply too far and too uninteresting to go any place on foot. Inhabitants will either drive significant distances to go about daily life, or they will retreat to a virtual world via internet and television in the comfort of their own home.

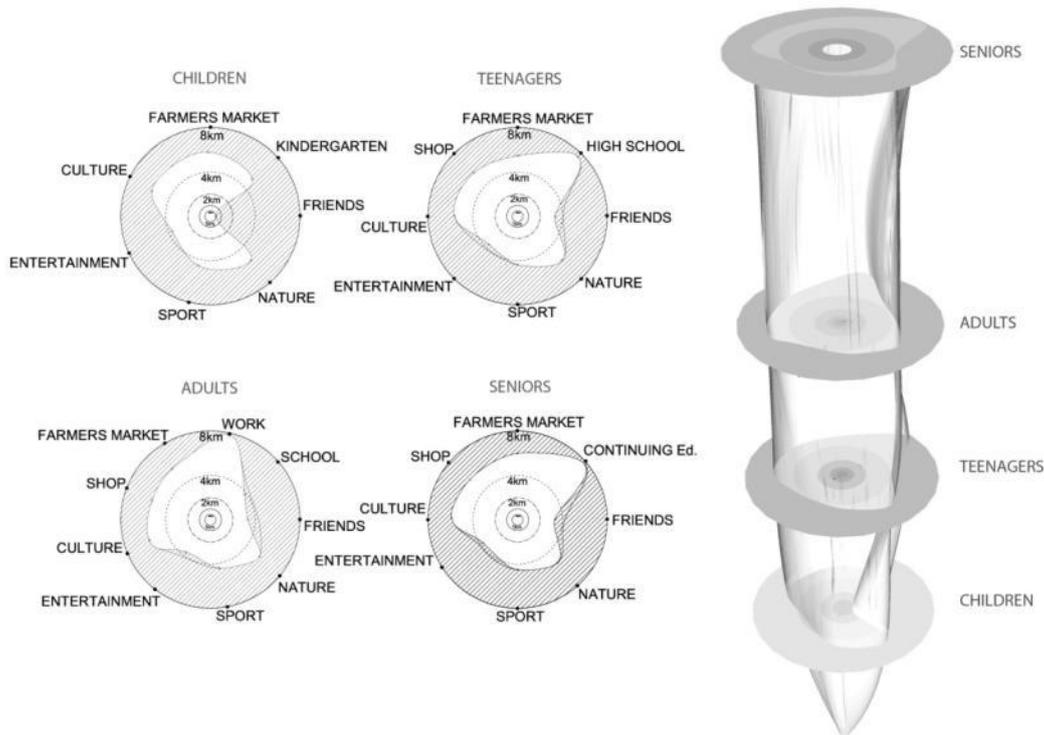


Figure 8: São José do Rio Preto, SP, Brazil Environmental pressures for weight gain /Guy Perry, IN-VI 2013/.

Residents who have moved to these areas from older neighborhoods bear two immediate consequences: a challenge to remain active and reduce their chances of obesity and of social isolation, often compensated by screen time.

3.2 A Typical Urban Extension vs. Health Based Design

The author has attempted to overcome the inherent health pitfalls of the typical Brazilian gated community by planning a community that encourages a more active use of the common spaces and features in and around the community. Focusing on four factors:

1. Proximity and convenience: Instead of creating a military style isolated gate into the community, the entry to the community is set on an entry plaza which provides shops, services, a market and a grade school. While the community remains gated, the message is that security is achieved by creating amenities that service the area, not only the community within the walls.

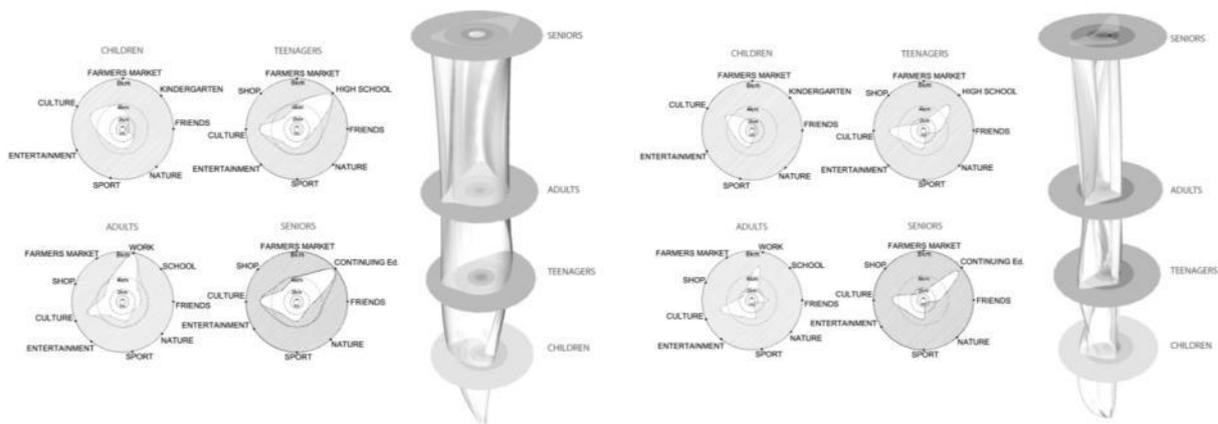


Figure 9: Alphaville (left) & Brisa de Atalaia (right), Sergipe. Environmental pressures for weight gain (below). /Guy Perry, IN-VI 2013/.

2. Focus on human scaled streets and common areas: The streets are conceived with a sidewalk/cycling path from the outset. No parking area is specifically built for the Club-house or beach although on-street parking is possible along the boulevard leading to it. Maintaining the majority of coconut palms provides shading to facilitate walking and cycling.
3. Diversity of housing offer: The community includes a range of housing options from 60 to 600M2. Intended to appeal to different stages in life, without a stigma of economic differentiation.
4. Respect of the existing ecosystem and protection of the coastal microclimate: Existing lake areas are protected, when possible trees are transplanted within the site. Housing set backs from lot lines, along with limitations in wall usage in heights allow ocean breezes to permeate the site.



Figure 10: Brisa de Atalaia, Sergipe

The overall effect is to compress distances to many daily activities and by doing so, get people away from their television or computer screens and out of their cars when they go to make basic errands, social gatherings, partake in sports, or go to the beach. Over 90% of the residential lots have direct access to the beach or lakes. The mild temperatures ensured by maintaining the breeze, the generous lakes and the shade created by the preserved palms will also reduce the thermal shock of going outside. Ideally, the protection of the microclimate will decrease the use of air conditioning for residences on the site, encouraging an indoor-outdoor lifestyle, common to all classes in the region, until recently.

3.3 Brazil conclusions

Comparing three economically successful projects: Sao Jose do Rio Preto (SP), Alphaville Sergipe and Brisa Damha, Sergipe we see the pressure for sedentary life in the first two through the significantly greater pedestrian distances, the quality of the on ground experience which is compromised by missing sidewalks, monotony of the streetscape and the lack of shading. The net effect is an environment that promotes obesity and it's related diseases. Brisa Damha, demonstrates the possibility of building a "Brazilian market" product that contributes to a more active, socially balanced and civically engaging lifestyle.

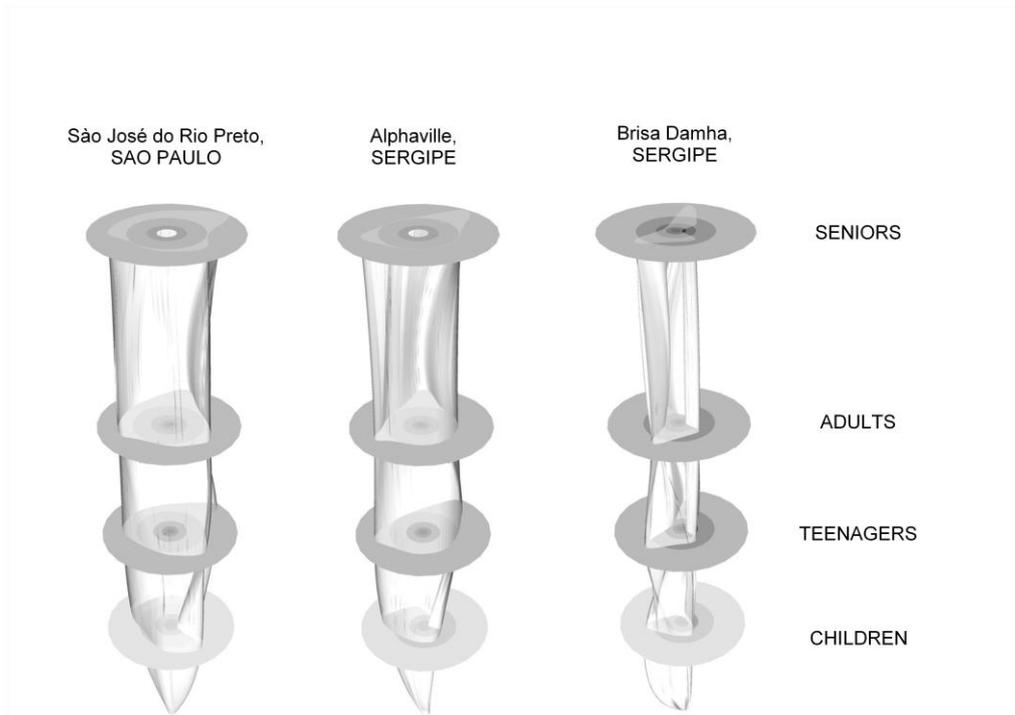


Figure 11: Summary Brazil. Environmental pressures for weight gain. /Guy Perry, IN-VI 2013/.

4. Central Europe and Poland

The Americas may seem like an easy target regarding the relationship of physical urban sprawl and obesity, however, European countries, especially those that have enjoyed rapid growth during the last decades have also showed significant increases in rates of obesity and degradation of health.

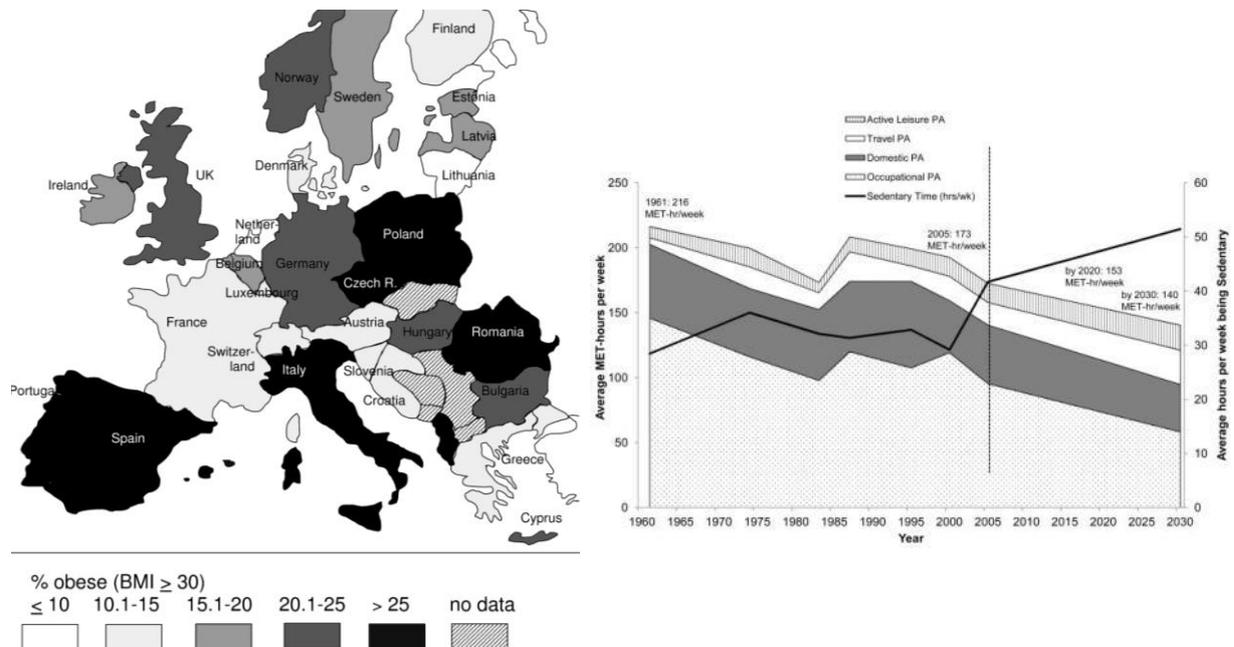


Figure 12: Obesity in Europe. Increasing sedentary lifestyle: United Kingdom.

In the UK, the only European country examined in the CDC study, occupational physical activity is declining at a rate that cannot be offset by an increase in leisure activity. It would require a significant increase in transport related physical activity to come close to striking a physical balance. This is a pattern likely to be echoed by other countries on the continent. While residents of the core of European cities still enjoy, in most cases, a physically vigorous urban environment, the peripheries of those same cities are physically challenging to lesser or greater degrees. Even Vienna, arguably one of the worlds best planned and managed cities, has its sprawling southern suburbs and increasing drive times along the highway corridor to Graz.

4.1 Urban expansion around Warsaw: Targowek-Marki vs. Miasteczko Wilanow

Warsaw has been one of Europe's fastest growing cities during the period from 2002 to 2012. It is worth comparing two distinct ways in which that city has expanded and their potential impact on the health of their inhabitants. Both areas were green fields in 2002, which have been developed rapidly and both are approximately 9 km from the center of Warsaw. The first is the Targowek-Marki area, with a development pattern we may consider typical of suburban development around Polish and Central European cities today. The second is part of the Wilanow district, a planned, integrated, mixed use district that is currently approximately 75% completed.

Targowek-Marki is physically characterized by a series of single use, limited access environments. Each enclave has a vehicular entrance that provides access, and an impression of security for residents. They are comprised of repetitive units that generally sell for nearly identical price points. Enclaves are surrounded by walls of varying height and are purely internally oriented in their organization and design. A resident of such an enclave may have to travel two or three kilometers to reach the "neighbor" or shop on the other side of a fence. Retail development is similarly inwardly focused, but in the form of shopping malls or big box retailers and are surrounded by parking areas larger than the buildings, themselves. Village schools and services are stretched beyond capacities in the face of rapid development. Few offices are located within this area.

Although there are constant programs of highway enlargement through the area, sidewalks and bicycle paths are scarce or nonexistent, making it hazardous to walk or cycle outside of the compounds. When paths do exist they are isolated, unconnected and generally go unused. The area has become nearly 100% automobile dependent for transportation. These built enclaves provide little activity or entertainment for children and teenagers that do not have access to a vehicle.

Miasteczko Wilanow is characterized by high-density development organized as part of the fabric of the city. Each building has a public face along streets and private side within courtyards. A large part of the ground floors of each structure are devoted to commerce and services. An office park, including research facilities and a hospital is constructed in scale with other buildings within the neighborhood. A variety of shopping centers with both an inward and outward orientation serve the neighborhood and surrounding district. Schools for all age groups are clustered within the area. Within the community the John Paul II Museum will be set within Europe's largest church built in the last 200 years. Few fences or gates remain, once construction of a parcel is completed.

Roads and parking areas are carefully sequestered in the area. Over 90% of the parking is contained under the ground level of the buildings. Sidewalks and bicycle paths connect all points in the new district. The paths are so popular that the shared bicycle program, normally reserved for the heart of the city has among its busiest stations within Wilanow. The primary form of movement within the community is on foot. There are over 30 Playgrounds for children of all ages while teenagers have sports facilities within cycling distance. The new

shopping areas are working towards integrating skateboard, BMX, snowboard parks and a skating rink within their developments. A bio and local farmers market has been launched and is highly successful within the community.

Marki, Warsaw



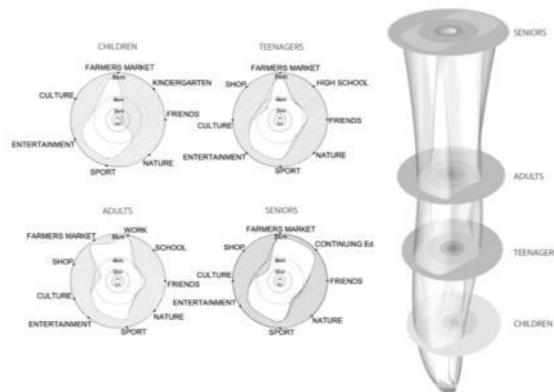
2002



2011



Land use Targówek - Marki



Miasteczko Wilanów, Warsaw



2002



2011



Land use Miasteczko Wilanow

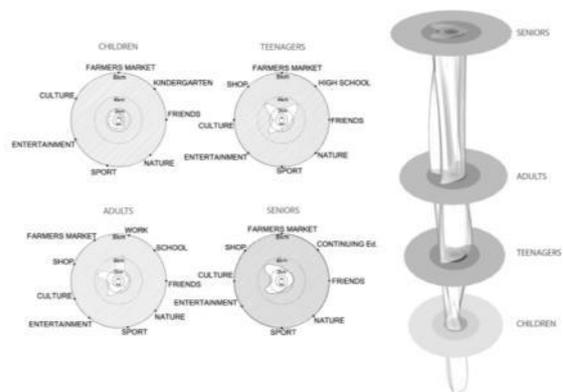


Figure 13: Warsaw, Marki vs Warsaw, Miasteczko Wilanów 2002 - 2011. Environmental pressures for weight gain. /Guy Perry, IN-VI 2013/.

4.2 Preliminary Comparative Data

While both Marki and Wilanow continue to grow rapidly and it is too early to have conclusive health statistics from these areas, several key indicators were revealed by publications of the Statistical Office of Warsaw in 2011. Among them, Wilanow enjoyed the highest birthrate in Poland, a child obesity rate of 0.47 %, compared with over 1% in Targowek - Marki and a adult Neoplasm (Cancer) rate of 0.27% compared with over 0.7% in Targowek - Marki.

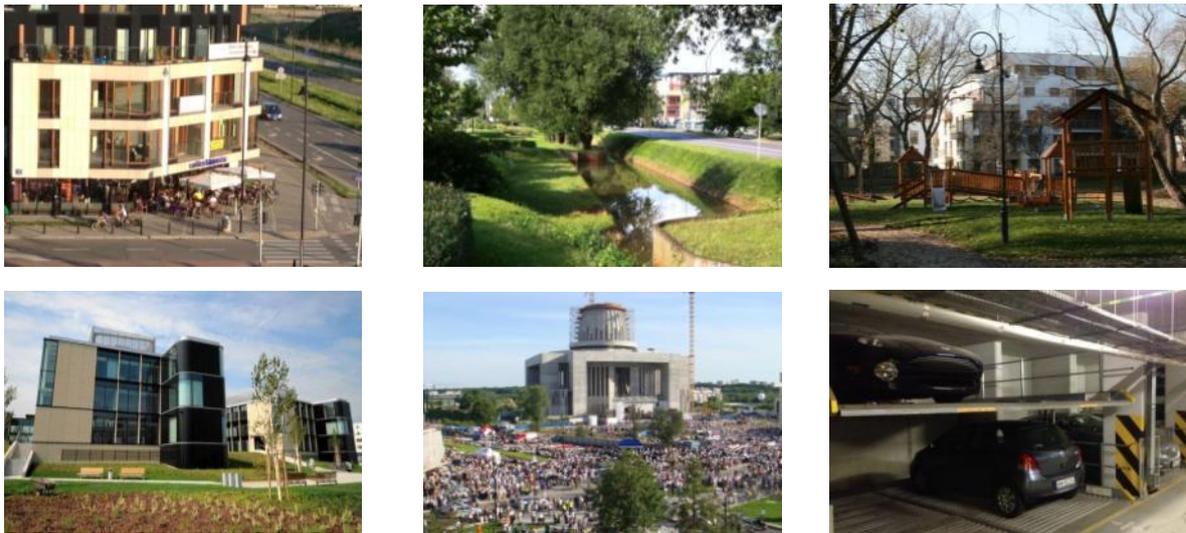


Figure 14: Miasteczko Wilanów 2012

It will be informative to monitor the relative health of this neighbourhood during the next decade. Current indications demonstrate that the district may be on track to create a standard for health driven design.



Figure 15: Miasteczko Wilanów. Public spaces in planning.

4.3 Residual Benefits

There have been a number of residual benefits of the integrated high density planning that are beyond direct health. The Wilanow district enjoys the lowest crime rate in Warsaw. As many visitors say: “it is the only place in Warsaw without graffiti on the walls”. The streets are very public, yet “claimed” by each resident. There is a visible pride when families walk down the first finished, well-groomed streets. Streets that the residents themselves finished to their liking. Miasteczko Wilanow also achieved a record voter turnout for Poland during the 2010 presidential election. The high density of land development, with over 10,000 residents per KM2, allows for the protection of hundreds of farms within the city limits of Warsaw and direct access to open spaces in the countryside which effectively make ideal walking, jogging, cycling and even ballooning environments.



Figure 16: The highest birth rate in Poland (13.25/1000 vs 10.04/1000 in 2010) /Newsweek (July/August 2012).

4.4 Residual benefits

Tackling the very tangible issue of health may also be a way of effectively grappling with general issues of environmental sustainability. Given that environmental sustainability continues to be considered an abstract, non-pressing issue, by most, health, in contrast may serve to reframe these related issue to create a platform for an immediate planning dialogue. The urgent issue of human health, when seen through the lens of planning, will raise awareness that by building more humanly oriented urban environments, we are addressing human environmental sustainability at a global scale as well.

5. Conclusions

Human built environments are becoming increasingly challenging to the health of their own residents. This evolution has crept up on our civilizations during the last decades of the 20th Century in the form of the spreading and segregation our environment often for short-term economic or political gain. The mechanization of our environment, long a symbol of technological progress, may have already gone too far for our own physical wellbeing. That

late 21st century challenge to our health is now being compounded by an increased orientation to a virtual world - one that engages us mentally, but not physically - at least for the time being.

Our own profession is partially, perhaps in some cases, largely, to blame for the physical inefficiencies of our cities relative to human beings today. However, it is not too late for us, especially in rapidly growing environments, to make our built environment relevant by being interesting, vigorous, healthy and environmentally sustainable enough to balance the impact that a parallel virtual world is having on our current and future wellbeing.

Building more humane environments are not only about protecting the health of mankind, they are, it turns out, to protect the "health" of our planet as well.

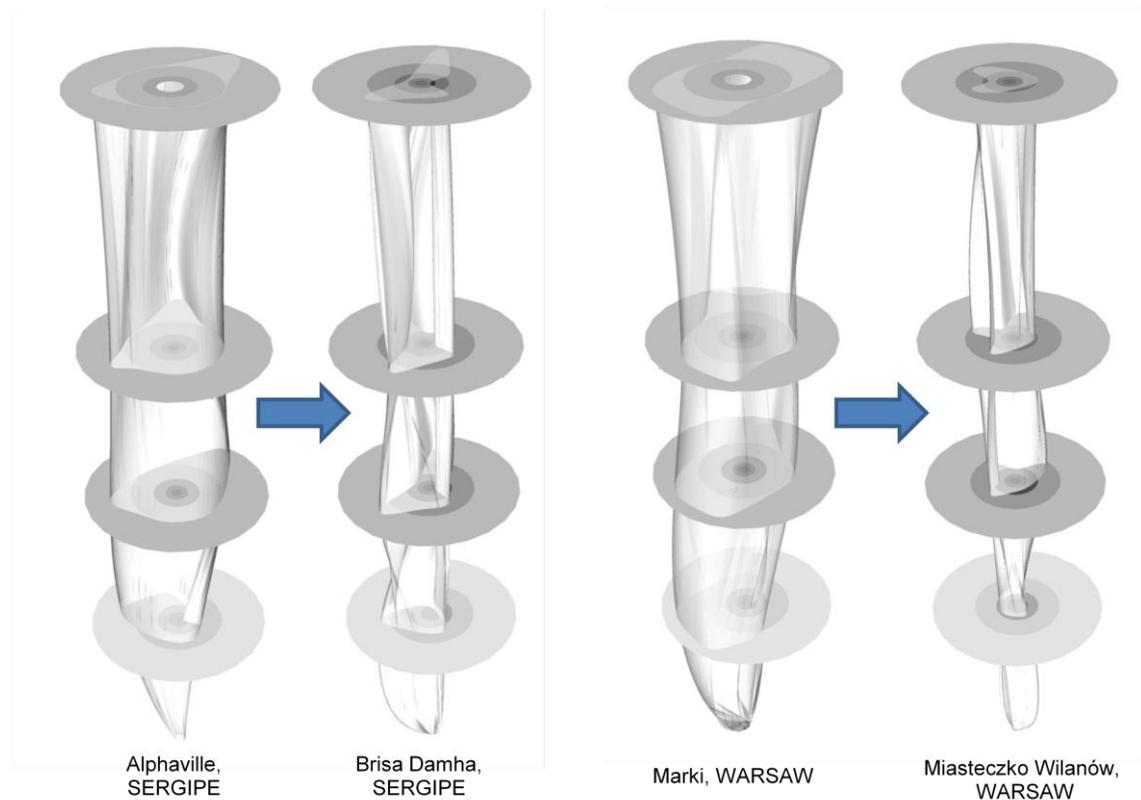


Figure 17: Summary. Environmental pressures for weight gain. /Guy Perry, IN-VI 2013/.

References:

Ng, S. W. and Popkin, B. M. (2012), Time use and physical activity: a shift away from movement across the globe. *Obesity Reviews*, 13: 659–680. doi: 10.1111/j.1467-789X.2011.00982.x

Hill, James O. et al. (2003), “Obesity and the Environment: Where do we go from Here?”, *Science*, Vol. 299 (February)

Jackson, R. J. et al. (2010), “Creating a Healthy Environment: The Impact of the Built Environment on Public Health” Center for Disease Control and Prevention, Public Health/Land-Use Monograph

Lee, Sang-Kook (2012) “Healthy Seoul Free from Internet Addiction of Children and Adolescents” Deserving and Outstanding Initiatives of the 2012 Guangzhou International Award for Urban Innovation, No. 1 (November)

Olshansky, S.J. et al. (2005), “A Potential Decline in the life expectancy in the United States in the 21st Century” *The New England Journal of Medicine*, Volume 352, Issue 11 (March)

Section under the supervision of Ajdyn Agnieszka (2011), “Panorama of Warsaw districts in 2011”, Statistical Office in Warsaw - Mazovian Centre for Regional Surveys;

Figure 1.

<http://www.thelancet.com>

Figure 2.

[National Center for Biotechnology Information, U.S. National Library of Medicine](#)

Figure 3.

<http://www.cdc.gov/>

<http://trends.truliablog.com/2013/01/weight-loss-metros>

Figure 4.

http://gamapserv.who.int/mapLibrary/Files/Maps/Global_Obesity_BothSexes_2008.png

Figure 5.

<http://coloradomountainclub.blogspot.com/2012/08/guest-blog-dr-haney-on-childhood-obesity.html>

<http://www.flickr.com/photos/jitze1942/7254478874/>

Figure 6.

<http://www.fastcoexist.com/1679157/mapping-the-link-between-obesity-and-car-driving>

Figure 7.

www.sciencedirect.com

Figure 8.

<https://maps.google.com/>

Figure 9.

<https://maps.google.com/>

Figure 12.

<http://www.biomedcentral.com/1471-2458/8/200>

[National Center for Biotechnology Information, U.S. National Library of Medicine](#)

Figure 13.

<https://maps.google.com/>

Figure 16.

Ozminkowski, Violetta (2012) "Siedlisko", Newsweek, 31/2012 (30 July)

Strategies on Improving the Attraction of Small Towns in China, Solving Problems Caused by Migration

QIN Mengdi, LIU Guanpeng, Tongji University, China

Peer Review ID: 58

Synopsis

Large population migration has brought China's urbanization rate to 50%. However, with the per capita GDP not increased, the current living standard has not reached a satisfactory level. Up to date, the migrations are mainly from the rural to urban areas directly, thus directly resulting to the increasingly serious rural hollowing and pressures of the cities. This paper presents putting small towns between rural and urban areas as a bridge of population migration. Small towns can form a system together with 'rural' and 'urban', and achieving the healthy flow of population between them. Next, this paper explores advantages and disadvantages of small towns and cities in China, with the goal to enhance the attractiveness of small towns. It suggests that small towns should be concerned to be able to gather population, so that they can contribute to relieving various problems of both rural and urban areas caused by migration. Through research, strategies on development of small towns are put forward. Meanwhile, an actual project of a small town around Shanghai has also been proposed as an evidence of the strategies.

1. Introduction

China's urbanization rate has reached 50% by the year 2010 driven by large-scale demographic migration. Studying the urbanization process of other countries such as France, Germany, USA and Japan, it can be found that the urbanization rate of 50% is an important time point that a series of problems may be concentrated to emerge. For example, the United Kingdom first reached this level in 1850, and came across lots of social contradictions and changes. Now China is facing a similar situation.

Urbanization rate somewhat reflects the trend of migration, and its growth represents economic progress, social development as well as the improvement of living standards. However, problems are also brought such as gaps between the rich and the poor, increasing class contradictions, and also the growing pressure on both energy and environment.

Although China's urbanization rate has reached 50%, the per capita GDP level still has a certain distance from developed countries. This also explains why the current China is still facing many problems in urban development.

Two main problems listed below have been gathered from the study on China's current population migration and the rapid development of urbanization. This paper is derived from these problems, trying to propose appropriate strategies based on them.

1.1 Problems Caused by Migration

Urbanization rate improved from a large number of rural people become urban population. These kinds of massive population movements made demographic dynamic, affecting the requirements of urban space, also making the relationship between city and the environment even tenser. Meanwhile, the unreasonable growth brought pressures within the city on both energy and environment. It also lets the traditional mode of urban development and governance face challenges.

In addition, with a large number of rural migrants coming to the city, rural areas become serious in hollowing. Thus lots of Chinese specialties issues are brought, such as children left behind, workers' posterities hard to go to school, social stability decreased, etc.

1.2 Problems Lies in Current Strategies

Now the Chinese government has taken some measures on dealing with problems brought by migration and development of urbanization. Recent policies by the Chinese government and planners are some kinds of developing rural areas into cities, which may adverse impact on the inherent rural development. Simply applying the development model of urban areas to rural places, not only can't completely solve rural development issues brought by migration, some will even fail to retain the rural population. Problems that happen in the early development time of big cities will begin to appear in rural areas, which may lead to abnormal development of these small and medium towns.

2. Overall Strategy

Thinking problems lies in the Chinese urban development and recent policies through the background that was mentioned above, strategies should be proposed. Current way of almost all migration in China is from rural areas to big cities directly, resulting in a sharp decline in the rural population, and the increase of urban population pressure. Therefore a new way to change current way of migration is needed.

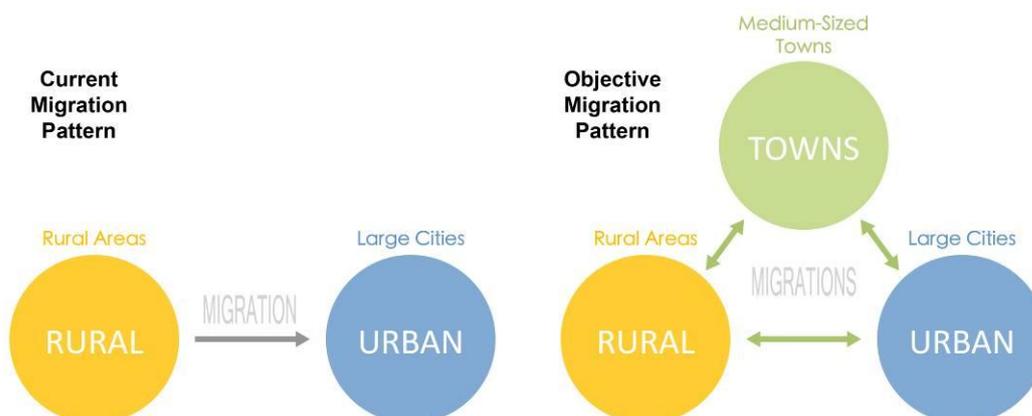


Figure 1: Current and objective pattern of migration
Source: Author's self-drawn

Figure 1 shows the current pattern and objective new pattern of migration. In the current migration pattern, population migration goes only from rural to urban, which makes hollow of the 'rural' and stressful of the 'urban'. By the time we put small and medium-sized towns between 'rural' and 'urban', situation would be changed. If the existence of towns between rural and urban areas can make population migration become a pattern of mutual flow, they will become a whole system and share benefits from each other. Small and medium-sized towns are the most critical parts of the system.

With the help of these towns, population could be attracted so that pressures of big cities would be alleviated and at the same time economic development would also be made. By proper developing methods, the small towns can be made good enough so that people who expect an urban life would like to live here rather than large cities. And at the same time city residents can also be attracted. The most effective way on achieving these is to create a place attractive enough by providing as much as working opportunities for everyone, building

an environmental friendly and sustainable living space, and also forming a place that can provide residents good living convenience the same as that in big cities.

On achieving this small 'town-relied' new migration pattern, improving the attraction of these 'towns' is of great importance. As for the new migration pattern, specific strategies are needed to be proposed based on the study of Chinese small towns.

3. Small Towns in China

Through the development of small towns and their attractiveness increased, problems in urbanization and migration mentioned could be dealt with. Therefore, there should be targeted improvement measures for Chinese small towns on increasing their attraction. And development status and problems of small towns in China area needed to be fully studied. Three main characteristics of small towns in China listed below are gathered from study.

3.1 History of Agriculture

China has a long farming history. The majority of Chinese people have strong emotions on farming, which could be easily seen from the popularity and acceptance of urban agriculture in China at present. People living in the city would be glad if they can have the opportunity to enjoy the farming life and farming experience.

However, currently agriculture in China has low output. And at the same time, industries in the city that have good output are considerable appealing. It can be seen from Figure 2 that agriculture accounts for a substantial proportion of landuse, but makes low output comparing with other industries. This situation has directly led to a large number of rural residents give up farming and come to the city for their development.

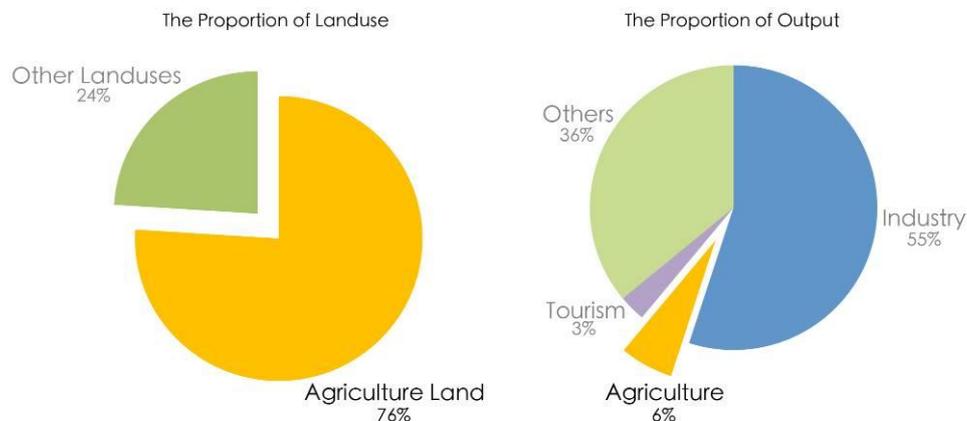


Figure 2: Average percentage of landuse and output of agriculture in China, 2011

Source: Author's self-drawn, data from China's national bureau of statistics

Agriculture in China now has problems on atrophy, downturn and unattractiveness. These can also be utilized to become development opportunities and potential for small towns.

3.2 Lacking of Space Creativity

Most small towns in China have faced a problem of lacking of characteristic space. The development of small town is generally based on the abandoning of their own culture heritage and the specialty of a particular area can hardly be valued and developed. Some of the small towns imitate the development pattern of big cities and expand the land blindly which cause a missing of their self-superiority and characteristic. Thus it is a key to develop small towns with measures adjusting to local conditions and features.

3.3 Public Facilities

Now the situation of imperfect public service facilities in most of China's has become a very prevalent problem. Meanwhile, due to land resource constraints, environmental conditions and some other problems, it is difficult to build some special services and facilities in the big cities. Compared to 'rural' and 'urban', 'towns' which lies between big cities and small villages, has the inherent resource advantage, such as a relatively convenient location, the vast land resources, good ecological environment, etc. However, the advantages of current conditions of the small towns have not been used. Facilities in towns are still far from enough, and some facilities that should be constructed in towns still have not been here.

4. Specific Strategies

Based on the above research on China's small and medium-sized towns, this part respectively formulate specific implementation strategy proposed according to these three aspects. Specific strategies are raised respectively on three aspects: tertiary-industrial agriculture, creative urban design, and building specific facilities, in order to make increasing the attraction of small towns into practice.

4.1 Tertiary-Industrial Agriculture

In terms of industry, Tertiary-Industrial Agriculture should be practiced. China has abundant agriculture cultural deposits which is distinct from other countries. Influenced of this culture and formed in the long run of laboring and life, china rural area has its unique traditions and customs which will absolutely affect the urban space. Therefore protection of agriculture is of great significance. But the current agricultural production value is relatively low which lead to a declining of agriculture and migration of rural population from rural area to urban area especially big cities. Thus it is necessary to improve agricultural output value and try to attract both rural population and urban population.

Small and medium-sized towns tend to have the requirement of characteristic agricultural development and potential. They have intact farming culture. In addition, the crops, followers and trees have the value of the landscape as well as viewing. As the environs of big cities, small towns have the location advantages in practicing Tertiary-Industrial Agriculture.

Therefore, strategies on tertiary-industrial agriculture have been raised, such as inheriting farming culture, making industry characteristics prominent, combining agriculture with tourism, suburbs pension, etc.

4.2 Design with characteristics

Planning and construction of small towns tend to neglect study of style and characteristics of themselves. As a result, the small towns began to blindly imitate the planning and construction ways big cities have, ending up to all the small towns looks similar with each other and all the towns are with no features. Local features are not only able to enhance the small town's taste, but can also have strong social benefits. Characteristics of places are somewhat like their business cards, which can help form people's memories of the city.

As designing for the characteristics, firstly the cultural features need to be found out and highlighted. Characteristics of the small towns are closely linked with their culture, so studies of the towns need to go deep into their own 'mental state' and connotations. As for developing the towns, only by inherit their historical culture, will not let them lose their 'memories'. Only when small towns formed their own culture characteristics, can they own personality, soul and vitality.

Secondly, city features should be formed using natural landscape. Landform varies in different small towns. Some of them have rivers, some have mountains, some have valleys and some have lakes. These are the generous gifts of nature and also the characteristic of a region. To build a town with its own features, the original spatial pattern of the town should be maintained. And it is necessary to preserve the humanity scale of space, beautiful environment of the landscape, and the pastoral landscape

Thirdly, basic tones, colors and architectural styles of the small towns all come from their own characteristics. Unique color and architectural styles tend to give people deep impression. Towns should also pay attention to their basic colors and architectural styles, which can help form their own characteristics. However, small towns in China often ignore this problem: houses look like matchboxes and all have similar heights, rigid architectural styles lack of vitality badly. This requires planners, policy makers and designers adept at exploring distinctive architectural styles with local history features, which might become characteristics of the towns in the future. Architectures are very important parts of elements composing the towns. Each of the buildings is closely related with their characteristics. So improving the quality of construction scheme selection is also of great importance.

Fourthly, Chinese traditional Feng Shui can be used in urban designs. Planning and constructions of the towns can get experiences from the traditional Chinese Feng Shui. Relying on the natural landscape, resource conditions and local characteristics, we can make sure that the towns are purposefully built. A 'breathing' city could be created by proper classical Chinese approach.

4.3 Build Specific Facilities

In China now, public service facilities in rural areas surrounding the cities are generally imperfect. Because of the shortage of land resources, the unsuitable environment and some other problem, the big cities have no conditions to construct some special facilities. While, small towns which are located in the transition region between urban and rural areas have some advantages such as relatively convenient location, rich land resources and a pleasant ecological environment.



Figure 3: Demands by both rural and urban areas of setting service facilities in towns
Source: Author's self-drawn

Therefore, small towns can meet the demand of residents' general services as well as construct some special service facilities such as large pension sanatorium, practice education base, labor camps. These facilities can serve the residents both in rural and urban area. It can be seen from figure 3. With this strategy, small towns can promote their attraction to the population of big cities and offer job opportunities to surplus rural labors

5. Case Practices

The overall strategy on dealing with problems that lies in the Chinese urban development and recent policies, is proposing a new way to change current way of migration with the help of small towns. Next, in order to increase attraction of small towns so that people could come here, specific strategies on three aspects are raised. However, the situations of using these strategies on factual project need to be tested by real practices. Therefore, strategies should be tested and verified in practice of real project, by the proposing of strategies relying on site analysis and applications of these strategies.

In this part, project of a particular small town of this kind has been selected around Shanghai, the largest city in China, as a demonstration and application of all these methods and strategies that have been mentioned. Here is the basic information of it and the proposing and using of strategies.

5.1 About the Project

The selected project is Xiaowangmiao Sub-district of Fenghua City Zhejiang Province which located in the Yangtze River delta economic area. To the north, Xiaowangmiao is 20 km from the urban area of Ningbo and 170 km from central Shanghai, so that it belongs to metropolis suburbs and has the advantages in transportation and development. (Figure 4)

The project is located in the plains and mountain transition area which has gentle slope hills and abundant natural resources, and the ecological environment there is excellent. Until the end of 2011, Xiaowangmiao has 21 administrative villages, 403 villager groups and 33800 registered population including 31,800 agriculture populations, 2,000 nonagricultural populations and 15,000 external populations.

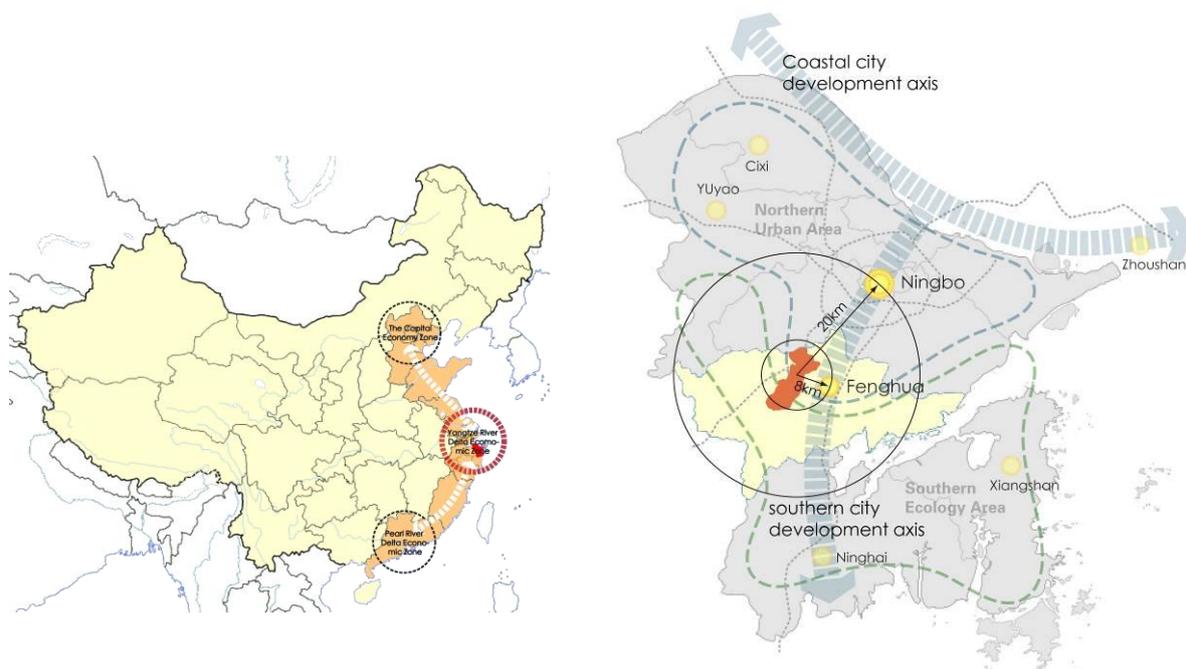


Figure 4: Macro (left) and micro (right) location of the project site
Source: Author's self-drawn

Xiaowangmiao Sub-district is a typical medium-sized town in suburban area that dominated by agriculture industry. Recently years, with the rapid development of social economy, Xiaowangmiao goes into a period of great development and construction. Due to the current

requires of urbanization, new orientation and transition should be planned. So we deepen the strategies that mentioned before and apply them in Xiaowangmiao according to the specific condition of this area.

After studying on the project, we summarized the SWOT analysis of Xiaowangmiao Sub-district as following. (Figure 5)

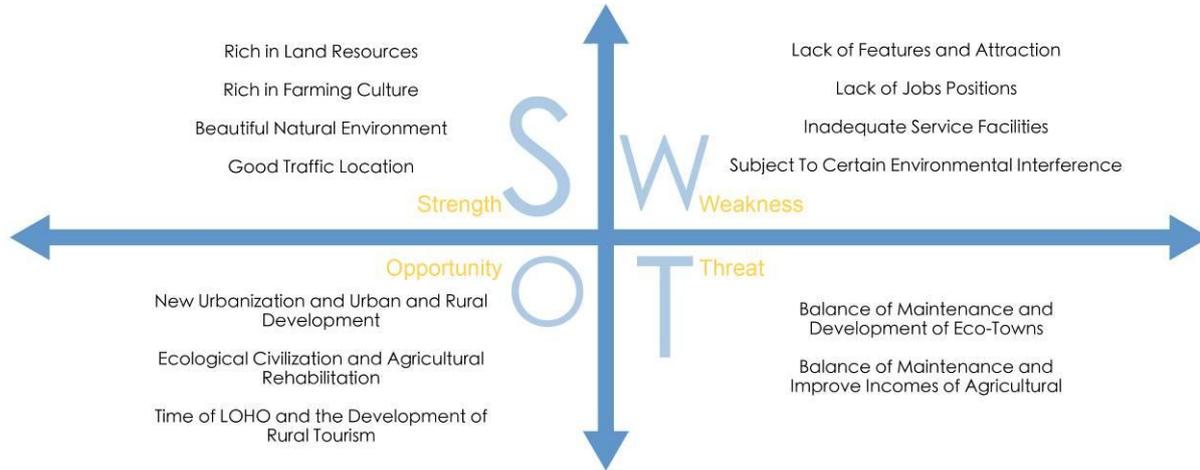


Figure 5: SWOT analysis of the Xiaowangmiao Sub-district
Source: Author's self-drawn

5.2 Developing Ideas

Based on the analysis above, it can be found that Xiaowangmiao is located at the border of rural and urban area where the interaction between rural and urban is relatively strong. It has beautiful rural scenery and ecological resources that big cities don't have as well as development opportunities and advantages of transposition that rural area lack.

Accordingly, this area should be developed as a link between urban and rural area that provide job opportunities and higher quality of life. At the same time, Xiaowangmiao can promote its self-attraction and attract more people in big cities coming here to tour, spend money, have a holiday and even settle down.

5.3 Strategies Applied

5.3.1 Tertiary-Industrial Agriculture

In the aspect of industry, Xiaowangmiao Sub-district has faced following problems.

Firstly, the traditional agriculture economy is confronted with a bottleneck period of development. It is not rational for the land utilization makeup and the benefit is low. As a result, an increasing number of agriculture population engaged in other industries.

Secondly, the simple supply-demand relationship between rural and urban area make the rural area as production units of the city, while the regional and local features have been forgotten gradually.

Finally, rural area can hardly provide enough jobs. Most Surplus Labors go to big cities to find job and leave the old people and children in the rural area which makes the hollow phenomenon appears in the countryside. (Figure 6) All these problems above can lead to the instability of rural society.

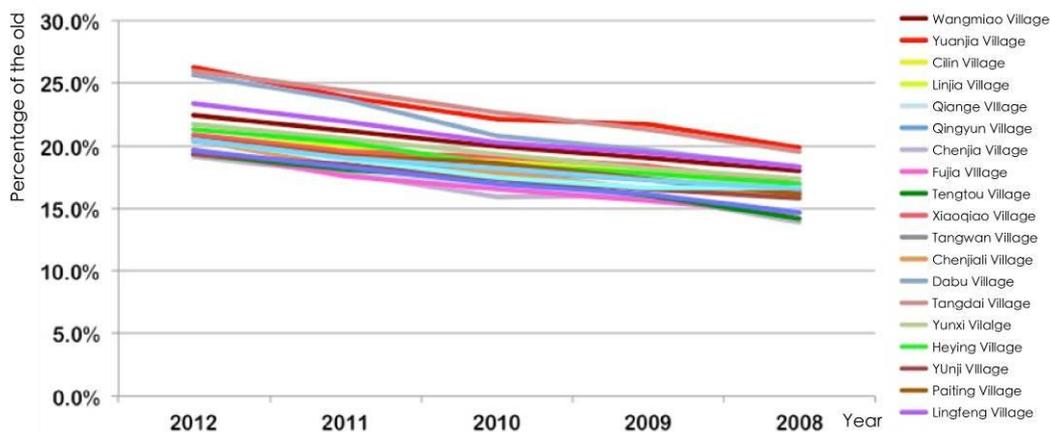


Figure 6: Average percentage of the old in Xiaowangmiao, 2008-2012
 Source: Author's self-drawn, data from China's national bureau of statistics

Fortunately, Xiaowangmiao Sub-district located in metropolitan suburb which is a good condition for Tertiary industrialization of agriculture. It has good natural environment and the potential to make the farmland as a kind of scenery. So, compared with the environmental pollution and damage caused by secondary industry, Tertiary-Industrial Agriculture is a more sustainable method. The intact Folk culture and traditional village that can make a contribution to Driving the development of consumption and services will be advantages in Tertiary industrialization of agriculture.

Therefore, we bring out the strategy of inheriting farming culture, making industry characteristics prominent, theme by agriculture throughout all of the consumer space. This will lead to a mixed mode of Tertiary-Industrial Agriculture including farming tourism, suburban pension, ecological tourism which are based on farming culture, tourism value, nature resource.(Figure 7)

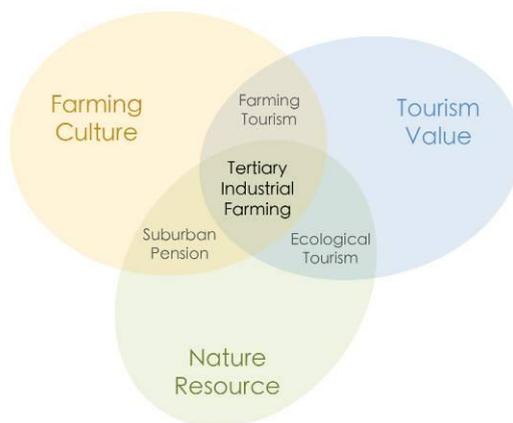


Figure 7: Mixed mode of the Tertiary-Industrial Agriculture
 Source: Author's self-drawn

5.3.2 Design with Culture and Ecology

Xiaowangmiao has excellent Natural ecological environment. It bears a subtropical monsoon climate, and with a maritime climate characteristic. The weather is relatively moderate with an annual precipitation of 1538.8mm and an annual rain day of 174 days. The forest coverage rate in Xiaowangmiao is 68.8%. The air and surface water monitoring report in Xiaowangmiao (2011) shows that many indexes conform to the standard requirement of nature reserve and scenic spot area.



Figure 8: Ecological characteristics refined in Xiaowangmiao
Source: Author's self-drawn



Figure 9: Detailed spaces strategies based on characteristics
Source: Author's self-drawn

Situations of culture and ecology in Xiaowangmiao have been refined. (Figure 8) Analysis of the current ecological conditions has been done with the principle of promoting culture and eco design. According to the advantages and problems of the three features (ecological matrix, ecological corridor and ecological plaque) gathered from the analysis, strategies are put forward also on three aspects: green plaque, green corridor and green production.

‘Green plaque’ is the first space strategy, it means things should be done on restoration of river blockage, increasing water network connectivity, providing biological pathways, keeping reservoirs lie in the mountains, and the flood control and water storage.

The second space strategy named ‘green corridor’. It let us improve the eco-space system, penetrate forest matrix into farmland and villages, also provide biological pathways.

Another space strategy is ‘green production’. It aims at developing tourism agriculture and suburban agricultural supermarkets, creating agricultural theme endowment, as well as expanding agricultural development pathways. While the detailed spaces strategies are showed in figure 9.

5.3.3 Specific Facilities

In the project of Xiaowangmiao, we consider two kind of public facilities: basic public service facilities and regional public service facilities.

There are two main problems of basic public service facilities. First is the lack of facilities and second is the standard of the facilities are relatively low.

In the matter of regional public service facilities, we should take both big cities and Xiaowangmiao area into consideration. People living in big cities often have the desire to live a healthy life and want to experience different culture and way of life. To Xiaowangmiao, it has abundant resources of land, scenery, fresh air, farming culture and so on. These are God-given that the big cities can hardly get. And some of the houses in villages can be rebuilt to some particular public facilities.

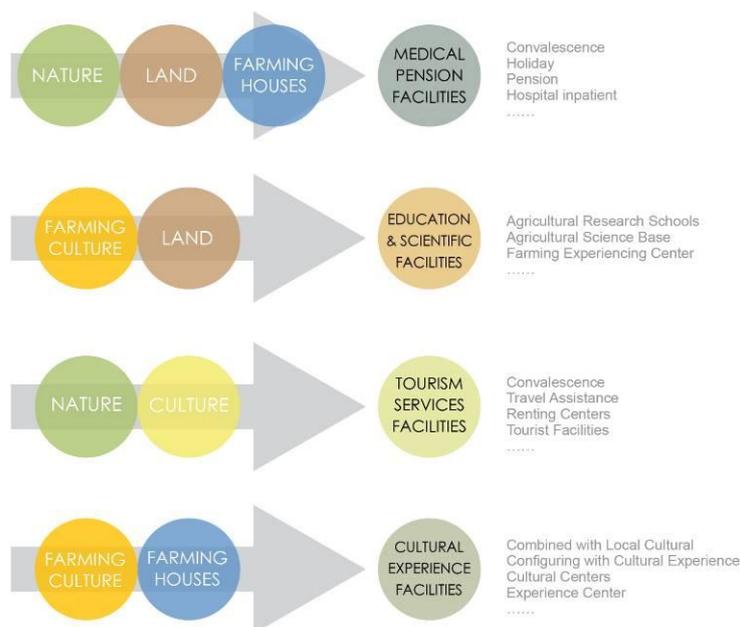


Figure 10: Public service facilities that can be arranged in Xiaowangmiao
Source: Author's self-drawn

Nowadays, the contact between rural and urban area is increasingly close. When we arrange public service facilities for Xiaowangmiao area, we should consider about the two aspects below. One is arranging the basic public service facilities reasonably, and the other is, on the basis of meeting basic needs, construct regional public service that can take full advantages of the resources of small towns and rural area and reach the goal of rural-urban coordinating development.

Based on the analysis before and combine with the actual situation in Xiaowangmiao, we come up with the arrangement of different kinds of public service facilities. (Figure 10)

6. Summary

Strategies are necessary. Through the study of small towns and status analysis of the practice project, it can be seen that it is necessary to develop small towns for attracting the population. In this way, the overall strategies on changing the current migration patterns could make the future development of urbanization healthy and orderly. Moreover, the economic, industrial and social development of the whole urban group can also be promoted. As a result, the urbanization will develop steadily, and so will the growth of economic, social progress, of course as well as people's living standards.

The proposed strategies are useful. Previously, strategies on enhancing the attractiveness of small towns have been presented, relying on analysis of the status of nowadays small towns in China. The Strategies have been successfully applied to an actual project, showing that these strategies have practical significance on increasing the attractiveness. The strategies are gathered through study of the case in which the regional situation and the specific issues lie, so that they are displaying current situation of the development of small towns in China. Therefore, the adoption of the strategies is bound to enhance the attractiveness of small towns.

On the current way of China's urbanization, urban and rural areas are both facing their own problems and strengths of development. At the same time, they can provide some different developing opportunities for each other. How to take advantage of the characteristics of urban and rural areas, and promote exchanges and coordinating development of both areas?

These are the problems that we need to study. Small towns are playing a very important role in this process. As they can help to form a 'three pillars system' together with villages and cities, in order to realize sustainable mobility patterns of population between these 'pillars'. Overall, coordinated development of urban and rural systems would be achieved, relying on establishment of the 'migration bridge' between 'rural' and 'urban'.

References:

- Geoff A. Wilson, Ian Whitehead (2012) "Local rural product as a 'relic' spatial strategy in globalized rural spaces: Evidence from County Clare", *Journal of Rural Studies*, Vol.28
- Brian Garrod, Roz Wornell, Ray Youell (2006) "Re-conceptualizing rural resources as countryside capital: The case of rural tourism", *Journal of Rural Studies*, Vol.22
- Aileen Stockdale, Migration (2006) "Pre-requisite for rural economic regeneration", *Journal of Rural Studies*, Vol.22
- Guangqing Chi, David W. Marcouiller (2012) "Natural amenities and their effects on migration along the urban-rural continuum", *The Annals of Regional Science*, Vol.8
- Hinderink, J, & Titus, M. (2002) "Small towns and regional development: Major findings and policy implications from comparative research", *Urban Studies*, Vol.39 (3)
- Rixt A. Bijker, Tialda Haartsen, Dirk Strijker. Migration to less-popular rural areas in the Netherlands: Exploring the motivations [J]. *Journal of Rural Studies*, 28(2012), 490-498
- Fred Dahms, Janine McComb (1999) "Interaction and functional change in a rural amenity area-a Canadian example", *Journal of Rural Studies*, Vol.15 (2)
- CHEN Xiaohua, ZHANG Xiaolin (2005) "Global urbanization Rural Development and Construction Practice and Inspiration", *World Geography*, Vol.9
- HU Juan, ZHU Xigang (2006) "Southwest England Country Planning on China's urban and rural planning Inspiration", *Urban issues*, Vol.3
- SHEN Qingji (1998) *Urban Ecology and Environment*, Tongji University Press
- YE Qimao (2006) "EU Countries Rural Community Construction Travelogue", *Foreign Urban Planning*, Vol.4
- HUANG Pengqi (2012) "Eco Design of Rural Small Towns", *Theoretical study of urban construction*, Vol.16
- WANG Juan, WANG Jun (2005) "Chinese Ancient Agricultural Society Village Location And Feng Shui Landscape Mode", *Xi'an University of Architecture and Technology*, Vol.24 (3)
- SHEN Jing (2009) "Based on the Theory of the Ecological Cycle of Beijing Suburb Village Planning", *Journal of Beijing University of Technology*
- Hinderink J, Titus M (2002) "Small towns and regional development: Major findings and policy implications from comparative research", *Urban Studies*, Vol.39 (3)
- Harvold K, Nordahl B (2012) "Planning in Rurbania: Rural Policy and the Planning System in Norway", *the Town Planning Review*, Vol.83 (2)
- Curry N, Owen S (2009) *Rural Planning in England: A Critique of Current Policy*, *the Town Planning Review*, Vol.80 (6)
- Kazuhiko Takeuchi, Yutaka Namiki, Hiroyasu Tanaka (1998) "Designing Eco-Villages for Revitalizing Japanese Rural Areas", *Ecological Engineering*, Vol.11

Planning Practices Coping with Migration in Backward Area in Western China: A Case Study of Liupanshui City

(Planning towards Migration in Backward Area)

Dan Shao, Ye Mu, China Academy of Urban Planning and Design, China

1. Introduction

Regional disparities are generally greater in developing nations worldwide, and China is an extreme case of sharp divide between east costal area and west hinterland (Polesse, 2009). Inevitably, internal migration in China of concentrating to the more developed east becomes a trend as shown in figure 1, leaving significant out-migration in the middle and west (Zhang, 2012). The amount of migrants nationwide was up to 230 million accounting for 17% of Chinese population (Zhao, 2013). The dilemma is that in out-migration area, outflow is necessary to enlarge the resources possession per person and hence to improve the income, while population scale is still a key factor to persistent development of cities within it.

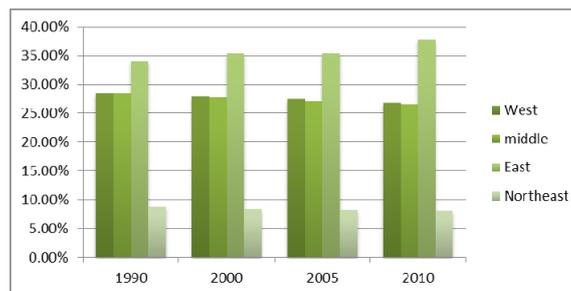


Figure 1: Change of proportions of resident population in four economic regions¹ from 1990 to 2010 (resource: National Bureau of Statistics, edit by author)

Liupanshui is a typical case locating in out-migration area in Guizhou Province in southwest China. It was built according to plans to form a modern industrial city specialized in coal and steel. Rise of cities in west China is usually based on mineral resources under government intervention. The prosperity was started by first immigrants since 1960s. However, markets not favoring the location along with the depletion of resources lead to a declining position. Migration here shifts from net inflow to a concurring situation of net outflow of the region and aggregation to the city. Problems of low urbanization and the widening rural-urban gap are worth attention. A series of plans made by government since 1983 aimed to improve the capacity of the city, and strategies of urbanization were proposed. Also, the planning area extended from the city to the administrative area. These plans play important roles affecting the migration in all aspects. Nevertheless, application of point-axis development (Lu, 1987) and satellite town theories did not accomplish the goal very well of cultivating urban hierarchy to accommodate new residents.

This paper described the achievements and obstacles of the city as a background as well as causes to the migration. On this basis, this paper focused on both demographic changes driven by migration and the planning practices for comparison to review the principles and methods taken. Implication involves that planning practices in backward area, also regarded as the out-migration area, face challenges from expanding the scale of city to blending into the region. Cities within the area have common problems in finding paths and driven forces to urbanization to reduce the gap and to avoid decline.

2. Achievements and Obstacles of the City

2.1 Circumstances

Liupanshui became a prefecture-level city in 1978 combined by three constituent counties, Liuzhi, Pan, and Shuicheng, and was the second established city in Guizhou Province. The administrative area of Liupanshui is approximately 10000 square kilometers with a population of 2.85 million in 2010 (Population Census Office, 2010). Per capita GDP of the region is 17462 Yuan (that is 2640 USD in 2010 exchange rate) rank second place in the province (Guizhou Bureau of Statistics, 2011). Population residing in the city was about 550 thousand, and the built-up area was about 54 square kilometers in Zhongshan District, the municipal district of the city. Measured by urban population and industrial output, Liupanshui is the second largest city in the Province and was designated as one of two sub-centers after the provincial capital Guiyang (Guizhou Provincial Government, 2001). The city has gained great economic success relying on dominant industries including coal, electricity and steel.

2.2 Initiation of Prosperity Led by Government

Liupanshui was built under the guidance of government's "Third-front city policies"² since 1960s. Most of these cities were distributed in traffic underdeveloped areas but rich in natural resources at that time (Huang, 2013). The initiation of the prosperity was led by government through national construction projects and migration policies.

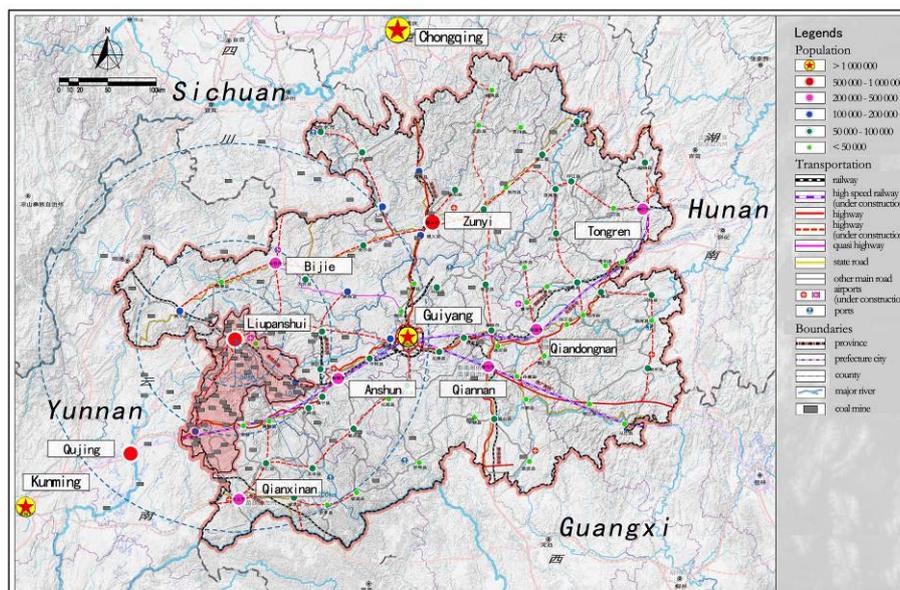


Figure 2: Location of Liupanshui based on the map of main coal producing areas and present situation of transportation in 2010 (resource: CAUPD, edit by author)

As figure 2 shows, the geographic location for coal deposits and closing to iron ore is the primary condition to success. Liupanshui locates in the heart of Yungui Coal Base which is one of the thirteen state coal bases in China and the only one in the region south of Yangtze River. Advantages were created through continuous input on railways by government to ensure competitive prices of the products. Nowadays, Liupanshui is a major rail hub in southwest China, and three railway lines intersect here as shown in figure 2. Migration policies reinforced the scenario above. Immigrants encouraged by government, mainly composed by engineers and skilled workers from north mature industries, turned the newly built plants into operation in a relatively short time. On this basis, the newly built city was started and kept a considerably high growth rate in past decades. Planning decisions and strategies directly determine the structure and morphology of the city instead of forming itself spontaneously.

2.3 Weakening of Advantages Driven by Market

Admittedly that the "three-front" city policies had positive effects on promoting the process of industrialization and increasing number of cities and towns in west China, these implanted ones do not lead to the general development of region. Location is a major obstacle to overcome. Figure 3 illustrates the radiant intensity and economic density³ of Liupanshui and major cities in the surrounding area of southwest China. As shown in the map, areas around Chengdu and Chongqing tend to form urban agglomeration, while capital cities including Guiyang, Kunming and Nanning are their own provincial center. The advantage of proximity to Chongqing distinguishes Zunyi from Liupanshui in the peripheral area.

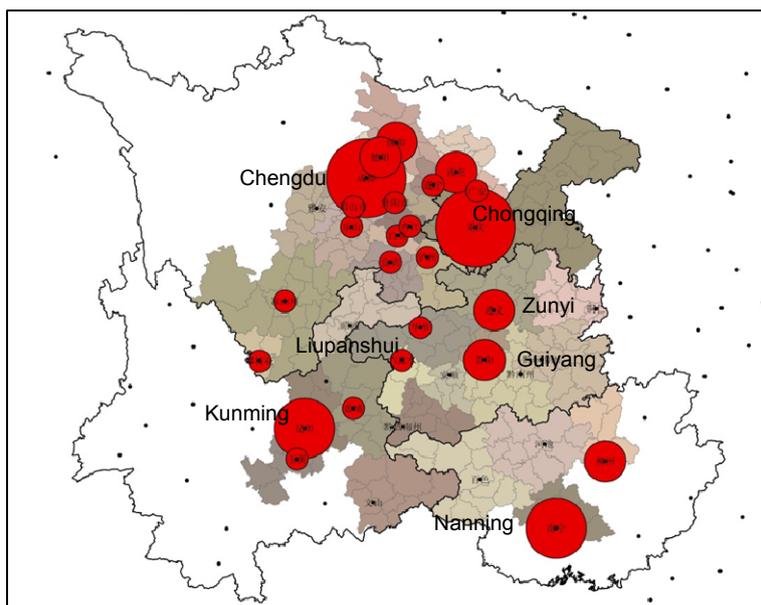


Figure 3: Illustration of the radiant intensity and economic density of Liupanshui and major cities in southwest China in 2010 (resource: by author)

In fact, the gross domestic production gap between Liupanshui and top cities in the province is expanding. The economic share of Liupanshui in the province slightly decreased after 2008 as figure 4 shows manifesting a declining position.

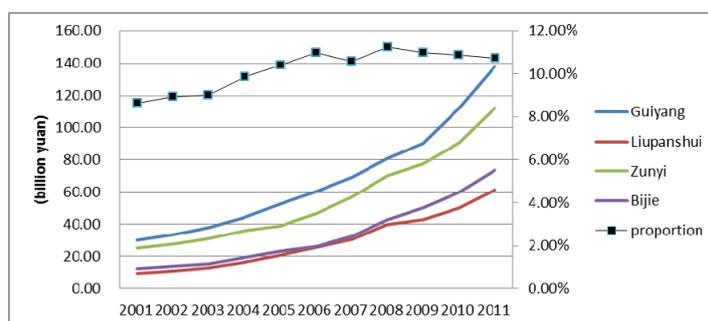


Figure 4: GDP growth of top four cities and the economic share of Liupanshui in Guizhou Province from 2001 to 2011 (resource: Guizhou bureau of statistics, edit by author)

The government shaped location advantages by improve transportation and bring immigrants. However, they are weakened by market from several aspects. First, the perfection of regional transport network relatively lowers the advantage of Liupanshui, along with the depletion of resources result more price competitive coal input from the north. Cheap iron ore overseas is changing southern ports more profitable for steel industries. Meanwhile, the government monopoly for purchase and selling being replaced by free market gradually compresses the

profits together. Recently, consideration on the market trends as well as construction cost leads to an altered straightforward route of the regional transportation including highways and high speed railways bypassing the city as shown in figure 5. Also, relaxation of policies activated migration throughout the country in 2000s, and as a consequence, first immigrants and their descendants are likely to going back their hometowns while local villagers are able to finding jobs in more developed regions instead of the nearby city. Advantage brought by migration is also undermined due to the loss of current and potential urban residents.

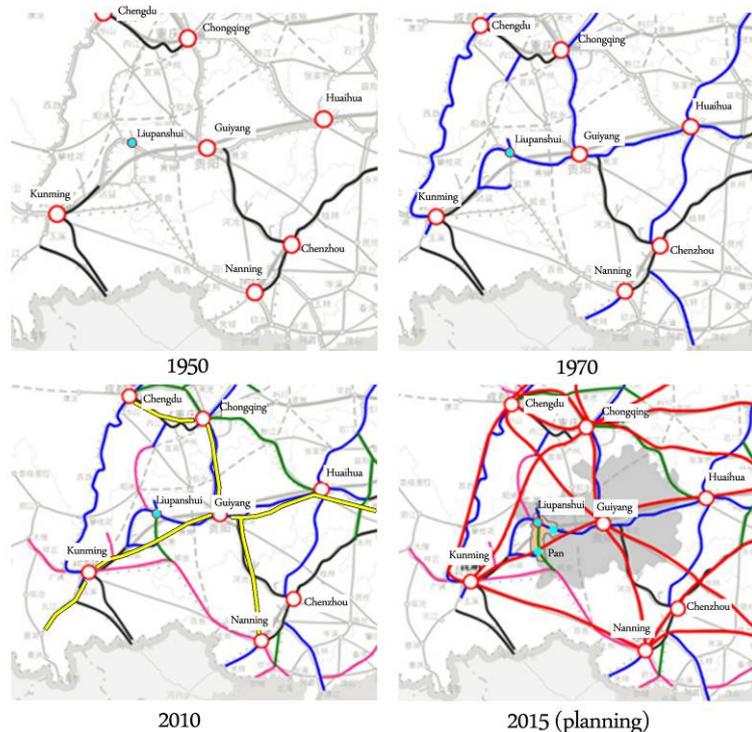


Figure 5: Illustration of the evolution of transportation in Liupanshui and the region (by author)

2.4 Increasing Concern on the Fragile Environment

Liupanshui locates in typical karst area which is extremely ecological sensitive. Increasing concern on this fragile environment becomes an important driven force to out-migration from the point of government. Excessive mining and development activities have already caused irreversible impacts including rocky desertification and pollution of upstream water sources. These harsh conditions are severe constraints to the previous underdevelopment as well as major obstacles to the sustainable development of future.

3. Demographic Changes

3.1 Methodology

Approaches to data of population in China rely on existing statistical systems and institutions mainly including the statistics bureau, municipal public security bureau and family planning commission. Commonly used indicators include registered population, resident population, migrants, temporary residents, etc. In this paper, direct and indirect methods are applied to describe the demographic changes driven by migration.

Direct data are available from the municipal public security bureau in the name of temporary residents which means dwellers with permanent household registration elsewhere residing in the place for more than 6 months, and annual changes of registered population are also

available reflecting part of the mechanical growth. In addition, bureau of labor and social security estimates the scale of migrant workers annually.

Indirect data utilize resources from the statistics bureau reflecting resident population in half a year scope in a certain region. National population censuses conducted about every 10 years are fundamental resource. The difference between registered and resident population can be representative to the scale of migrants. As supplement, the natural growth rate calculated by family planning commission can be used to separate the mechanical growth.

Migration is studied in two different scopes. One is taking the administrative area as a whole to study migration trends in the region. Another one involves analysis of counties within the administrative area to study the distribution and relocation of population.

3.2 Migration: Outflow Trends in the Region

Statistics of resident population is available only in recent years comparing with registered population. For a long time, the migration is constrained due to policies, thus the resident population is very close to the registered. As announced by 2010 population census, the resident population of Liupanshui was 2851.2 thousand, with an increase of 10.7 thousand or 3.90 percent from the year of 2000.

Table 1 shows the comparison of population growth rate and the contribution of natural growth. Although the natural growth rate keeps going down due to the birth control, the population growth rate decreases more significantly. In the period from 1978 to 1990, both the natural growth and mechanical growth contributes to the increase of population. However, the population growth was almost equal to the natural growth in 1990s which means the low occurrence of migration. In the new century, the out-migration should be responsible for the low population growth rate since 2000. Migration in Liupanshui shifts from net inflow to net outflow in past decades.

Table1: Annual population growth rate and natural growth rate of Liupanshui from 1978 to 2010 (resource: Liupanshui municipal government, LPS bureau of statistics, edit by author)

	population growth rate	natural growth rate
1978 - 1990	1.98%	1.33%
1990 - 2000	1.12%	1.24%
2000 - 2010	0.38%	0.85%

As figure 6 shows, the resident population was 134 thousand less than registered population in 2000, and it is reasonable to infer that the net outflow started before 2000. The difference later expanded to 338 thousand in 2010 accounting for 11% of the registered population.

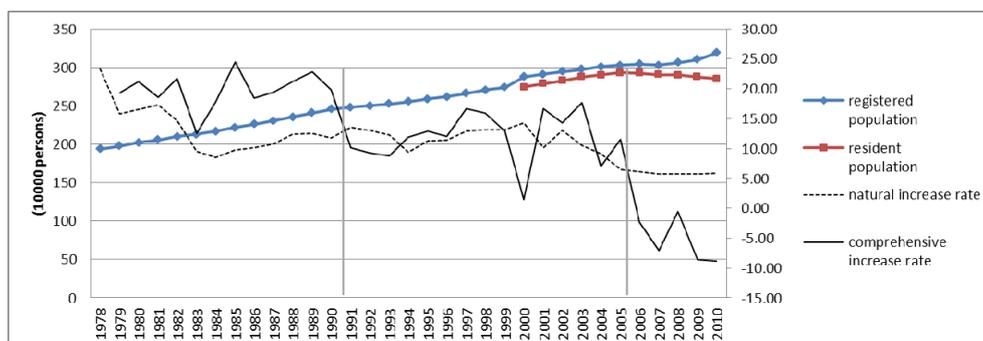


Figure 6: Trends of population and growth rate of Liupanshui from 1978 to 2010 (resource: Liupanshui bureau of statistics, edit by author)

Liupanshui bureau of labor estimates that the total amount of migrant workers residing elsewhere grows from 100 thousand to 335 thousand from 1996 to 2010. Also, commission of family planning gives the number of out-migrants up to 375 thousand in 2009. Given that the number of temporary residents in Liupanshui is about 118 thousand in 2010, the total amount of migrants including in-migrants and out-migrants may reach 450 thousand or 15.8 percent of the resident population. Nevertheless, relatively small part of migration is reflected on the changes of registered population. In this context, annual net inflow population was about 11 thousand from 1980 to 1990, and the number dropped to 4 thousand from 1990 to 1996 and finally shifted to negative in 2008. After all, the in-migrants and out-migrants remain the same at the scale of about 30 thousand from 1990 to 2011 leading to subtle influences on the population growth.

Guizhou is among the provinces with highest proportion of population outflow in the country. As figure 7 shows, population decline occurs in the listing provinces from 2000 to 2010 according to the national population census. Comparatively, Sichuan province output migrant workers earlier than the others and basically achieved balance in recent years despite of the regional wealth's accumulation. In the contrast, the outflow trends of Guizhou province is expanding and has not yet entered a stable stage. The out-migrant population in Guizhou increased 6.14 million with annual growth rate of 14.7 percent from 1996 to 2010, while the number of Liupanshui in the period is around 10 percent. Comparing with the 7.1 million net outflow populations accounting for 17% of the registered population in Guizhou, the intensity of migration of Liupanshui is relatively low.

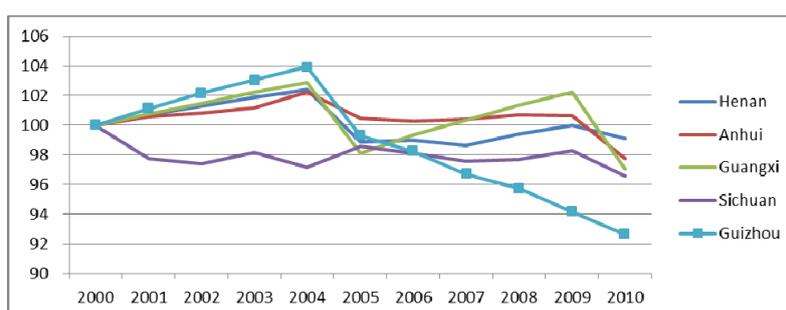


Figure 7: Standardized data of resident population evolvement (base year = 100) of Henan, Anhui, Guangxi, Sichuan and Guizhou from 2000 to 2010 (National bureau of statistics, edit by author)

Few correspondences are confirmed between the intensity of migration and the economy performance indicated by annual growth of GDP or per capita GDP as shown in table 2. The economic growth of Guizhou province keeps exceeding the average level of the country in recent years, and Guiyang is the only inflow region in the province taking the administrative area as a whole. Although the relatively high per capita GDP in Guiyang and Liupanshui seems to be related to the positive growth of resident population, other cities are irrelevant to the conclusion. Generally, cities with higher proportion of migrants featured by more negative population growth relate to the geographic proximity along with easier transport access to the developed regions.

Table2: Resident population of Guizhou province by prefecture level cities between 2000 and 2010 compared with GDP increase rate and per capita GDP (Guizhou bureau of statistics, edit by author)

city	resident population (10000 persons)			GDP increase rate in 2010 over 2009	per capita GDP in 2010 (yuan)
	2000	2010	growth rate		
Guiyang	337.45	432.46	28.16%	14.3%	26209
Liupanshui	274.41	285.12	3.90%	15.8%	17462
Zunyi	713.94	612.70	-14.18%	14.7%	14650
Anshun	252.30	229.73	-8.95%	12.1%	10014
Tongren	374.77	309.24	-17.49%	12.9%	9304

Qianxinan	296.53	280.59	-5.38%	12.1%	10839
Bijie	690.63	653.64	-5.36%	14.6%	9113
Qiandongnan	422.49	348.06	-17.62%	14.2%	8839
Qiannan	379.78	323.11	-14.92%	14.2%	10861
the province	3524.77	3474.65	-1.42%	12.8%	13228
the country	126582	133972	5.8%	10.3%	29706

Distribution of out-migrant destinations are analysed as well. According to statistics from the bureau of labour, destinations within the province accounted for only 20 percent in Guizhou in 2010, while 80 percent migrants left Liupanshui for other provinces mainly in developed east including Zhejiang, Guangdong, Jiangsu and Fujian. The outflow to Yunnan, is mainly formed by migrants from Pan, one of the constituent counties of Liupanshui on the border of Guizhou in adjacent to Kunming as surveyed by the local government. Figure 8 reflects the large scale of out-migrants going to other provinces from Guizhou comparing to average level of west region. Migrants moving within the same city only account for only 12.4 percent of the total amount. Change of registered population manifests the same trend of the predominant interprovincial migration. Ratio of registered out-migrants between moving to other provinces and within the province is about 6.5. As to the not many in-migrants in Liupanshui, 76.9 percent of them come from residences within the province. The implication is that migration contributes rather small part to the local urbanization process.

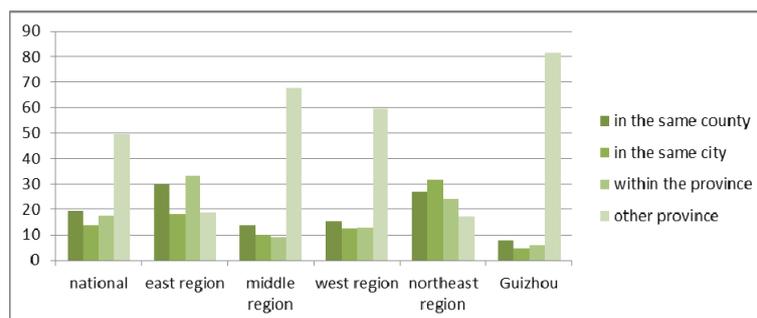


Figure 8: Rural migrant worker flows by regions in 2005 (Agricultural census office, edit by author)

3.3 Migration: Rural-urban Aggregation

The rural-urban aggregation is studied under the premise of the outflow trends in the region as discussed before. Recent master plan of Liupanshui designated the core city locating in Zhongshan district as the center of the administrative area, and Hongguo County in Pan as well as Pingzhai County in Liuzhi are sub-centers (Liupanshui municipal government, 2006). In 2010, resident population in the city is about 550 thousand exceeding the pre-assumed scale of 500 thousand in master plan, while the population of two sub-centers are 110 and 140 thousand under anticipation. Other counties are dispersed in the city with rather small population. Calculated by urban residents, more than 48 of the 94 counties resides less than 2 thousand people which are not regarded as urban areas according to Chinese standard. Rural-urban aggregation in this area is characterized by co-existing polarized development of the core city and balanced underdeveloped counties in wide area.

Figure 9 illustrates the distribution of population density in the unit of county. In the highest urbanized area in the city, population density reaches 7747 persons per square kilometers, and that is 27 times of the average level of the administrative area and almost as much as the same with Guiyang. Meanwhile, counties with higher population density tend to be along major transportation corridors. As figure 10 shows, about 90% counties are going through the negative population growth, while only about 12 percent of these out-migrants move into the core city and Hongguo county in Pan referring to the study above.

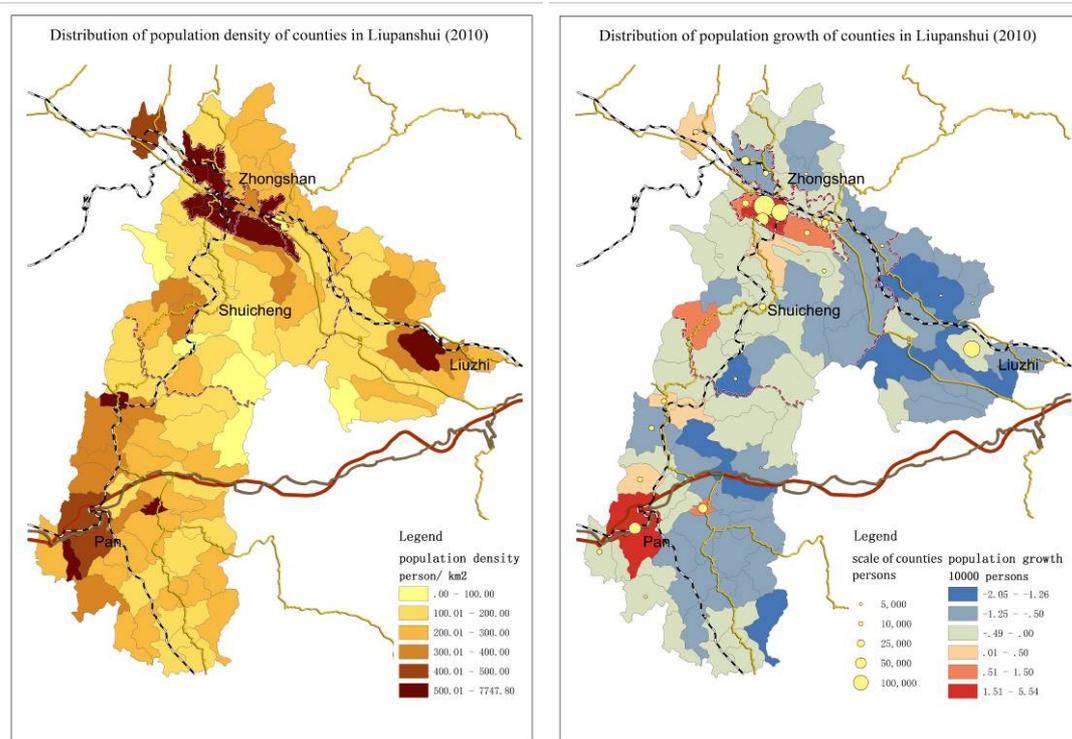


Figure 9: Distribution of population density of counties in Liupanshui in 2010 (resource: LPS bureau of statistics, edit and drawn by author)

Figure 10: Distribution and population growth of counties in Liupanshui in 2010 (resource: LPS bureau of statistics, edit and drawn by author)

Rapid growth of resident population in the city shows that the polarization trend continues. The number increased from 102 thousand or 29.1 percent of total urban population in the city in 1983 to 208 thousand or 44.7 percent in 1996. The proportion then reached 67.4 percent in 2010. Classified by constituent counties or district as shown in table 3, population share of Zhongshan increased 5.11 percent from 2000 to 2010, while the others decreased in the period. Population of temporary residents also increased significantly in Zhongshan with an average scale of half of the whole residents from 2007 to 2011.

Table3: Demographic indications by constituent counties of Liupanshui (resource: LPS bureau of statistics, LPS municipal public security bureau, edit by author)

constituent county/district	proportion of residents (%)		temporary residents (persons)					urban residents in 2010 (persons)
	2000	2010	2007	2008	2009	2010	2011	
Zhongshan	16.52	21.63	25038	31232	50302	67161	59551	491438
Shuicheng	24.72	24.71	10480	8814	9956	12831	13316	18878
Pan	39.02	36.30	20572	22725	28657	27517	30647	176237
Liuzhi	19.74	17.36	3032	1911	2514	5361	10050	130050
total	100	100	59122	64682	91429	112870	113564	816603

Figure 11 shows an investigation on purposes of migration of temporary residents conducted by municipal public security bureau in 2011. Generally, more than 48 percent of temporary residents are engaged in industry despite of the differences between counties. Purpose of migration includes running business, finding work, getting educated or medical care, tourist and so on. Zhongshan or the core city shows a higher proportion on running business and seeking education and others, which suggests more possible attractions to the migrants.

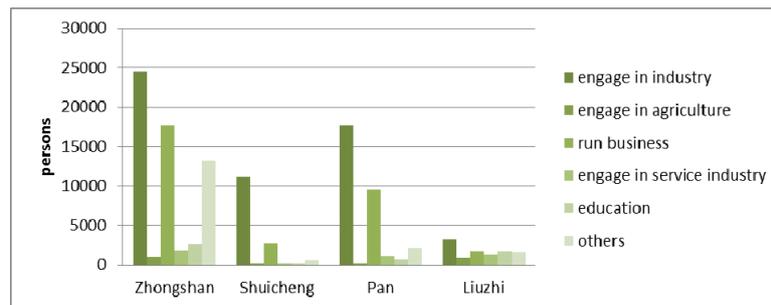


Figure 11: Purpose of surveyed temporary residents of Liupanshui in 2011
(resource: LPS municipal public security bureau, edit by author)

3.4 Confronting Challenges

Case study on the demographic change of Liupanshui proved the limited effect on the development of region stimulated by the implanted city in terms of urbanization. Despite of the concurring outflow trends in the region and rural-urban aggregation, the urbanization of the city remains in rather low level and increase. Generally, urbanization rate in high-income countries are higher than low-income countries which implies positive correlations between regional wealth and urbanization. As to Liupanshui, urbanization rate of 28.65 percent (Population Census Office, 2011) equated to only 57 percent of average level of the country or 87 percent of the province. Per capita GDP in Liupanshui accounts for 60 percent of the state average and per capita income ranked 8 of 9 in the province (Guizhou Bureau of Statistics, 2011). The poor performance is largely because of the location in Guizhou and the weak ties between the city and its populous hinterland. Over 50 percent of the residents are engaged in agriculture while providing only 6 percent of the economic growth indicated by GDP (LPS Bureau of Statistics, 2011). The low productive capabilities reveal the extreme poverty of the agricultural area in Liupanshui.

The accelerating trends of aggregation to the core city along with high incidence of poverty lead to an expanding rural-urban gap. Ratio of income gap between urban residents and villagers increased from 4.1:1 in 2003 to 4.7:1 in 2007. Extra payment from the government reduced this gap to 4.3:1 in 2009 which is still rather high comparing with the average level of 3.2:1 in China (Bureau of Statistics, 2010).

The annual growth rate of urbanization in Liupanshui is only 0.56 percent in the past decade comparing with 0.99 percent of the province or 1.35 percent of the country. Reasons to the slow increase are multifarious. Actually, indicated by proportion of registered non-agricultural population, Liupanshui ranks second place in the province after Guiyang which means the number of original urban residents in the city were more due to the three-front city policies. However, relatively low intensity of migration is corresponding to the slow growth. As a contrast, the proportion of migrants in Zunyi was up to 24.7 percent while the urbanization rate increased 12.06 percent in the same period. Meanwhile, Shuicheng surrounding the city is a state-level poverty-stricken county with a population of 450 thousand below the poverty line of 2300 yuan in 2011 (LPS Bureau of Statistics, 2012), and that is about 64 percent of the total residents. As shown in figure 9 and 10, in the wide area of low population density, the outflow trends are not as clear as Pan and Liuzhi as well which illustrates that poverty holds back the migration. Other reasons including poor education and cultural segregation with local ethnic minorities reduce the local intention to migration. On the other hand, the city did not offer sufficient jobs to new migrants constrained by the dominant coal and steel industries. The scale of workers engaged in mining industries has been around 65 thousand persons for more than 10 years, while proportion of employees engaged in industry raised from 7.83 percent in 2001 to 16.45 percent in 2005 and then dropped to 14.31 percent in 2010 (LPS Bureau of Statistics, 2011). The static change of job opportunities in industries in recent years is related to the continuous fall of resident populations. Additionally, unlike

under government intervention, the migration for the whole household family under market economy can be costly and leading to the temporary and pondering migrants.

Signs indicate that the trends of migration discussed above will continue, and both pull and push factors as often explained to urbanization here are insufficient. Basically, the migration benefits the local development as has been proved many times in out-migration area. While considering the individual differentia, out-migration has raised great challenges to cities. In the region with high poverty occurrence, field surveys also proved that these out-migrants are probably urban residents living in counties who can afford the migration instead of people in extreme poverty sharing limited resources. To understand the confronting challenges and reasons behind is very important to planning decisions.

4. Review of Planning Practices

4.1 Market over Government

In the context of urban planning system in China, master plans are major strategic plans with statutory status set by law. Liupanshui has made three versions of master plans including “1983 to 2000 master plan”, “1997 to 2020 master plan”, “2006 to 2020 master plan” after the economic reform in 1978. Currently, a new version from 2012 to 2030 is being prepared. State's virtual monopoly over urban investment and decision making has steadily eroded which is also revealed in planning practices (Leaf, 1998). First, the revised cycle of plans is shortened from 14 years to 9 years and to 6 years if taking into account the ongoing version. The multi-shareholders in market economy are particularly prone to uncertainty. On the other hand, the corresponding plans especially those involve market development tend to break through the laws regulated in master plans manifesting strong driven forces of the market.

4.2 Setting Goals: Wavering Strategies of Urbanization

For a long time, there is controversy over the strategy of urbanization of giving priorities to large cities or small towns in the state's level. Urbanization even processed backward due to policy guidelines in the 1960s and 1970s. The prevailing view of activating small towns while constraining metropolitans become unified national strategy which deeply affects territorial planning practices in the 1980s and 1990s. In the 1983 master plan of Liupanshui, settling immigrants engaged in mining and steel industry was the primary task. Building new towns based on coal deposit was the main concern at that time. Urban populations in 1990 and 2000 were predicted according to the number of employee in the state industries. Scale of urban residents was considered to be very important, and hence the population gathering in new towns was estimated over-optimistically.

In 1990s, enlightened by the Guangdong experience on loading small-scale industries in counties, impulses on developing small towns were spread nationwide. Generally, new towns planned in 1983 developed under expected and the result was attributed to the lack of inter connections between cities and towns. With the support of a new round of large-scale construction of transport infrastructure since 1960s, integrating the administrative area to cultivate urban hierarchy was the main strategy in 1997 master plan. “Point-axis” theory was the rationale of the urban system pattern—promoting central towns along railways and major roads to foster development axis and town clusters subsequently. Meanwhile, scale of the core city was constrained according to policies. Nevertheless, the development goal of the core city was to build a comprehensive central city of western Guizhou instead of its own service base as proposed before. Multiple industries with all kinds of shareholders and industrial types were encouraged to enhance the diversity and capacity of the core city. Also, a short guidance to the migration of surplus labor in rural area was mentioned. Principle of proximity was applied and urbanization was designed to rely on the migration of nearby rural residents within the administrative area.

Most of the designated central towns developed faster than the others in the period but still less than expected in scale. “Coordinating urban and rural” in 2003 and “building socialist countryside” in 2005 are main guidance of the state in the new century. Urbanization strategy put emphasis on both urban and rural area in 2006 master plan. The goal of urbanization was to consolidate the urban system and to promote share prosperity of both urban and rural residents. As to cities, the core city combined with satellite towns were planned to build metropolitan area, and central towns were dispersed evenly in the administrative area to be centers for the surrounding rural population. Satellite towns would function as decentralized area of the core city as well as attractions to cost sensitive industries. Other central towns located in the hinterland were counted on new roads to develop in the plan. Migrant workers were not mentioned in this version though there were indications. Infrastructures including small-scale irrigation and low-level country roads were planned to alter the poverty of rural area. Combination and displacement of villages were important part of the strategy.

During this period, building roads were turned into the operation of market nationwide. As a consequence, comparing with free country roads, toll highways with high investment and high profits fit the mode better. Hence, the strategies of satellite towns and central towns based on accessible transportation network can never achieve. Also affected by the market, rapid real estate development in the city significantly increased house prices and increased costs of immigrants while the governments still offer very cheap land to heavy industries. The changeable emphasis between cities, towns and rural area tends to distract the urbanization.

4.3 Spatial Structure: Compromise of Urban Hierarchy

Urban hierarchy is a ranking of settlements according to their size and functions, along with the distribution of cities and towns shape the spatial structure. The region of Liupanshui is not a traditional agriculture land, and cultivating urban hierarchy means to explore new towns all the time. Decisions made by plans directly guide the distribution of population within the administrative area due to the following investment on industries and infrastructures. As reviewed before, both 1997 and 2006 master plans rely on pre-procedure of transportation, but different in the thinking of polarized and balanced development. 1997 master plan proposed clearly to concentrate 72 percent of counties to the main transport corridors. The summarized spatial structure of “Two principal axes and one secondary axis of development” was inherited in the 2006 version. Figure 12 shows the evolvement of the distribution of central cities and towns in three versions of master plans.

Industrial park refers to a certain region designed to obtain scale effect within or outside a town. Industrial parks play important roles in providing job opportunities in current China. As to Liupanshui as shown in figure 13, the existing ones are symbolized in red circle, and all the projected parks are willing to load coal chemistry industries. Many of these parks were not built in central towns under the guidance of the master plan, since many of them were decided by external forces including senior government and private investors. The implement of industrial parks show the complicated situation in considering the urban system.

Both plans divided towns into 4 categories within the administrative area, including the center or the core city, the sub-centers, central towns and other towns as shown in table 4. The core city and the two sub-centers were confirmed in the 1983 master plan and were sustained in the following plans. However, the central towns are changeable over years both in size and location. 1997 master plan chose towns close to the central cities to form urban clusters, while 2006 master plan picked new growing point in the low population density area to balance the spatial layout. The reality is that the distribution of wealth of counties is very close to the map of population density. Despite of the general development along the axes, the time distance subjected to terrain prevented the interactions between the core city and sub-centers. The distribution of population growth as shown in figure 10 also proves the not well performances of the chosen central towns. The aggregation trend to core city is keeping and satellite towns as well as central towns in hinterland did not fulfill the expected scale and

function. The figure implies that Pan is more economically active comparing with Liuzhi, the earliest mining community being replaced by Pan in Liupanshui.

The 1997 and 2006 master plan underestimated the outflow trends in the region, and made prediction of rising population according to the historical statistics. Urbanization rate would reach 42 percent or 1.0 percent annually from 1997 to 2020 as proposed in 1997 master plan. As planned in 2006, the urbanization rate would reach 48.5 percent in 2020. The over-sized population combined with the high rate of urbanization led to overestimated urban residents especially those allocated to counties. The plans revised themselves into larger cities along with smaller central towns based on existed conditions, which can be considered as a compromise of the theoretical urban hierarchy.

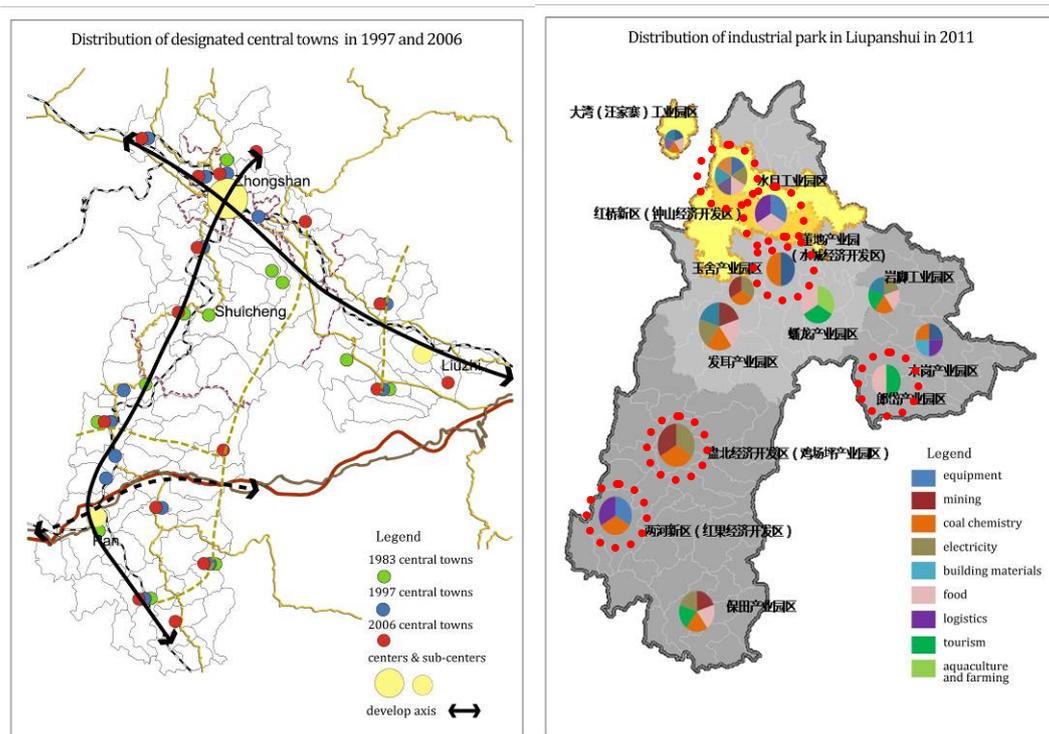


Figure 12: Distribution of designated central cities and towns in 1983, 1997 and 2006 master plan (resource: LPS municipal government D, edit and drawn by author)

Figure 13: Distribution of projected and current industrial parks classified by industrial type in 2011 (resource: LPS municipal government, edit and drawn by author)

Table4: Comparison of urban hierarchy in scale between 1983, 1997 and 2006 master plan (unit: thousand persons) (LPS municipal government, edit by author)

categories	city/town	2000 (1983 version)		2020 (1997 version)		2020 (2006 version)	
		number	population	number	population	number	population
1 st	The core city	1	240	1	450	1	800+100
2 nd	Hongguo	1	80	1	200-300	1	350
	Pingzhai	1	80	1	200-300	1	200
	Yangjiazhai	1	80	--	--	--	--
3 rd	--	--	--	3	50-100	11	10-100
	--	--	--	9	20-50		
4 th	--	--	--	28	4-20	28	<10
	total	--	740	43	1470	42	1700

5. Conclusion

Demographic changes in Liupanshui are featured by concurring outflow in the region as well as the polarized urban aggregation, and the migration trends are expanding. The dominant out-migration contributes rather small part to the local urbanization. Advantages shaped by government are currently weakened by market, and planning practices need to adapt to the change. To enhance the activity of city and to reduce the rural-urban gap are confronting challenges to sustainable development. From past experiences, planning intervention as a method guiding the population growth as well as the relocation of residents is still effective. In the case of Liupanshui, an implanted city surrounded by extreme poverty in segregation, it is necessary to examine the principles and methods taken according to the specific characters. As to the investment on transportation, the bidirectional effects are worth attention: migration in region with convenient access to transport networks is intensified both on inflow and outflow. Under the background of seeking more balanced development of the country, planning practices in backward area should endeavor to improve the city within the region.

Endnotes

1. Four economic regions refer to eastern, middle, western and northeastern provinces divided by geography. Many indications are summarized by these divisions, and Guizhou is among the 12 provinces in west region.
2. "Third-front city policies" focuses on the defense industry and heavy industry carried out in large-scale industrial constructions from 1964 to 1978 in mid-west China.
3. Radiant intensities were calculated by urban production multiplying urban population. Data resources are from statistical year books, and the map was made with ArcGIS by author.

References

- Agriculture census office (2005) Press Release on Major Figures of the Second Agriculture Census, available on website: <http://www.stats.gov.cn/tjgb/nypcgb/>
- China Academy of Urban Planning & Design (ab. CAUPD) (2011) Guizhou Strategic Plan from 2011 to 2030, retrieved from CAUPD
- Guizhou Provincial Government (2001) Guizhou Strategic Plan from 2001 to 2020, retrieved from CAUPD
- Guizhou Bureau of Statistics (2011) Guizhou Statistical Yearbook, China Statistics Press
- Huang, Li et al (2013) "Planning and development for third-front cities at the critical point of paradigm shift", Urban Planning Forum, Vol. 206 No.1
- Leaf, Michael (1998) "Urban planning and urban reality under Chinese economic reforms", Journal of Planning Education and Research, Vol. 18 No. 2
- Lu, D.D. (1987) "Macro strategy of regional development", Journal of Geographical Sciences, Vol. 42 No. 2
- Liupanshui (ab. LPS) municipal government, 1983 Master Plan, 1997 Master Plan, 2006 Master Plan, retrieved from CAUPD
- Liupanshui bureau of statistics(2011), Liupanshui Statistical Yearbook
- Liupanshui public security bureau, Report of temporary residents from 2007 to 2011
- National Bureau of Statistics (2011) China Statistical Yearbook, China Statistics Press
- Population Census Office under National Bureau of Statistics(2010) Tabulation on the 2010 population census of China, China Statistics Press
- Polese, Mario (2009) The wealth & poverty of regions: why cities matter, The University of Chicago Press
- Zhang, Li (2012) "Small towns but grand strategies: a study on the development of small towns in provinces with net out-migration", Urban Planning Forum, Vol. 199 No.1
- Zhao, Min et al (2013) "On urbanization driven by rural-urban migration and its policy implications", Urban Planning Forum, Vol. 207 No.2

“Golden pheasants flying out of Mountain Jungle”——Strategy Planning of Urban Space Development under the background of ecological migration, DanZhai, Guizhou, China.

TANG LEI, Jiangsu Institute of Urban Planning and Design, China

ID: 188

GUIZHOU, An inland mountainous province in southwest China. Influenced by natural constraints, its Economic development lags behind for a long time. DANZHAI is located in the southeast of GUIZHOU, with a total area of 940 square kilometers and a population of 173000 people, is a remote, poor and backward key county of poverty alleviation and development work. Due to need of survival and reproduction, fragile ecological environment has been destroyed

MIAO, an ethnic minority that accounts for 85.57% of the population, has primitive simplicity, full-bodied and unique ethnic customs. Their totem is “golden pheasant”. MIAO has seven state-level non-material cultural heritages, such as batik, ancient papermaking, golden pheasant dance, etc. The ecological culture is rich, but is facing the plight of lost

2012, Government of China put forward ‘speed up development, poverty eradication’ slogan under the precondition of ecological environment protection. How can we intense use of limited land resources, accumulate population, leapfrog development, and at the same time ensure ecological security, continue minority traditional culture, is the top issue that the local government is facing. In order to healthy promote urbanization, to promote coordinated development of urban and rural areas, implement poverty alleviation and ecological migration, We completed ‘Strategy Planning of Urban Space Development in DanZhai’

We proposed the following development strategies: 1, Regional coordination and City circle development. 2, Ecological security and Landscape resource Highlight. 3, Cultural heritage protection and Ethnic minority culture propagation. 4, Traditional industry Renaissance and Immigrant employment driven. 5, Policy supports and Immigrants safeguard. 6, Perfect service Completion and immigrants’ requirements realization

1. Analysis of the situation

1.1 Scope of planning

DanZhai is located in the southeast of Guizhou province, west of Miao and Dong autonomous county, has seven towns and 1 state farms, 161 administrative villages, 3 residents committee, such as Longquan, XingRenn, ChangQing, Yang Wu, etc. At the end of 2011, its land area is 937.7 square kilometers, and permanent population is 121700 people. the population density is 130 people/sq km. There are 21 ethnic minorities such as miao, shui, ethnic minority population of 148600 people, accounting for 88.37% of the household register population.

1.2 Characteristics

(1) location: conjugate throat of south sea. (2) topography: the west wing valley deep, more central to the low hilly land. (3) climate temperature: both monsoon climate pleasant and cool mountain climate characteristics. (4) ecological environment, ecological background is relatively fragile, water sensitivity is stronger (5) distribution of river network is dense and water is adequate, mainly facing water shortage problem (6) physical culture resources: rich heritage, distinctive, scattered distribution, lack of organization. (7) quickly gathered the

early industrial development, industrial scale, structure and hierarchy for breakthrough. (8) in the initial stage of urbanization, urban agglomeration ability to strengthen. (9) passenger traffic network traffic inconvenience, lack of cargo transportation, tourist traffic is not sound.

2. Planning appeal

2.1 Macro policy

National ecological civilization construction and the Guizhou province of Dan village across the development request, Dan village walk in the way of development and protection.

2.2 Provincial requirements

Dan village development advantages and qian east development path, the combination of characteristic development is the only way for the development of Dan village in the future.

2.3 Regional responsibility

"are kay MaDan" integration development background, Dan village needs into the area, build regional network, undertake industrial transfer.

2.4 Development of power

Actively use top-down policy support, the external to internal blood transfusion.

3. Goals and Positioning

3.1 Planning objectives

The future out of poverty, build a well-off society in an all-round way, realize the basic modernization forward.

3.2 Ffunction orientation

Projects node, the industrial new city, immigrant district, MiaoJiang holy land.

- (1) Projects node node along the "projects" city in guizhou, geared to the needs of the forefront of the pearl river delta.
- (2) Industrial new city: "are kay MaDan" town groups emerging industrial base.
- (3) Immigrant district: guizhou province industrial migration, poverty alleviation and immigrants, engineering.
- (4) MiaoXiang sanctuary: human-god offerings, qian dong miao culture shows the characteristics of leisure and tourism areas.

4. Philosophy and Strategy

4.1 Development philosophy adhere to the "ecological priority, people-oriented, characteristic development," the new idea.

(1) Ecological priority. According to the climate characteristics of Dan village rainy foggy, and the characteristic of the mountain ecological environment is relatively fragile, build suitable for local ecological environment protection, ecological construction and the system resource utilization, ecological civilization under the background of ecological city and MiaoXiang landscape pattern with the combination of the urban development pattern.

(2) People-oriented. Focus on different crowd demand, taking the advantage of the policy, and guide the local rural population into the city employment and life; Optimize the entrepreneurial environment, accelerate the population flow out; Accelerate industrial agglomeration, and guide foreign population agglomeration; Perfect the supporting environment, guide the immigrant population is relatively concentrated.

(3) Characteristic development. Follow the east region in guizhou province area characteristic development path, to go to adapt to the mountainous, many ethnic minority areas of the interactive development of the new urbanization and new industrialization road;

Protect national and historical and cultural resources, shaping of urban space characteristics, the development of cultural tourism industry, to speed up production city.

4.2 Development strategy - to establish the regional coordination, low carbon ecological, cultural leading, industry breakthrough, traffic guide "five major strategies

- (1) Regional coordination strategy. Dan village should actively draw lessons from the successful experience of the development from coastal developed areas, facing the opportunities brought about by the transformation of development in the province and the state, seeking external motivation. In town "are kay MaDan" ethnic construct multiple poles, multi-cultural, strengthen division of labor, each looking for their own positioning and development path.
- (2) Low carbon ecological strategy. Set up respecting nature, comply with the nature, protect the natural ecological civilization concept, the principle of ecological civilization concept and fully integrated into the whole process of urbanization, intensive, intelligent and green, low carbon new path of urbanization.
- (3) Dan village of the miao culture resources superiority into full play, to carry forward the "tenacity, perseverance," national quality, and the combination of "open, inclusive" of modern society, with good inner quality and positive external image, persistent increase win the future competition of city soft power, leading the city's industrial, economic and social development, show Dan village "dare rushed, pioneering innovation, the pursuit of excellence" of the new look.
- (4) Industry breakthrough strategies. Characteristics of new industrialization road, building and ecological civilization, can significantly increase the employment absorption capacity, characteristic industry to promote the development of county territory economy efficient intensive system.
- (5) Traffic guiding strategy. Through traffic system planning and construction of the perfect, weak shift traffic conditions restricting urban development present situation, the implementation of regional and urban transportation system development guide.

5. Spatial structure and Layout

- 5.1 Land suitability and land bearing capacity. Construction land space is not large, mainly concentrated in the kaili - Dan village along the transport corridor.**
- 5.2 Analysis of population size. Ecological migration, population and industry attracting jointly drive the population growth.**
- 5.3 Spatial organization of the county. "Three", difference development, urban and rural plan as a whole.**
- 5.4 Urban spatial structure and layout. Open construction "area, compact group" of ecological city spatial structure.**

Combining with the characteristics of urban terrain, and the future trend of urban function integration, guide the urban space form "dual-core linkage, surrounded by groups, green heart center, into the green gallery net" spatial structure.

- (1) Dual-core linkage. According to Dan village city development pattern, combined with the old city area and admiralty district function layout, make old city center and admiralty centre two core, the old city center based on the existing public facilities, administrative, business and culture service function, build business and administrative center; Admiralty centre, relying on the new town construction and industrial agglomeration function, focus on developing industries such as commerce, logistics services and business office function, make admiralty business and trade center, promote the city integration.
- (2) Group. According to the difference of Dan village city urban function development, combined with the natural landscape, such as mountains, rivers, natural ecological factors as corridor, is divided into seven groups, to inner loop and outer loop transit passenger in series in each group, including the old city area of central, southern and northern three groups and

admiralty area of integrated services, evergreen, Yang wu four southern industry and industry groups. The old city area of the three groups of old city transformation and is based on creating quality of life as the leading functional group, admiralty district of four groups based on local resources industry transfer, industrial cluster, convergence of developed areas to build production service industry, life and trade in a body's comprehensive group.

(3) Green heart center. Combination of longquan mountain natural mountains, east lake water body such as natural ecological factors as the carrier, based on landscape features and cultural construction, to the east lake and southern mountain areas as Dan village urban greening landscape and cultural tourism innovation core area. Green corridor into a network. Combined with natural mountain, water, steep slope, gully and important landscape greening along the road of building roads, building ecological corridor, the peripheral wedge into the urban ecological landscape at the same time, the construction of urban green networks.

6. Guide and Support system planning

6.1 Ecological security system

(1) Ecological function regionalization. According to the county land use suitability evaluation results and important eco-function areas distribution, combining DanZhaiXian domain distribution of basic farmland, rivers, such as water, drinking water source, vegetation distribution will DanZhaiXian domain is divided into ecological conservation area, the ecological transition zone and ecological looks remarkably three functional areas.

(2) Low carbon ecological guide. DanZhaiXian low carbon ecological construction can be divided into 3 big plates, seven strategies and article 17 of the measures. Three plate refers to "compact" spatial planning, "frugal" resource management and the "landscape" urban construction; Seven strategies respectively for carbon reduction, traffic layout carbon reduction, industry threshold, and solid waste in the utilization of water resources utilization, ecological construction, and improve the micro climate.

6.2 National cultural innovation system

6.2.1 National cultural heritage

(1) Strengthen the miao cultures show. With the aid of public culture platform, such as miao cultures museum, etc., the miao culture systematic and comprehensive introduction and demonstration, let more people be familiar with the miao cultures and love miao cultures, miao cultures. Through the national center for the performing stage, public cultural activities such as open space, leisure square, let miao cultures vivid and naturally integrated into the life.

(2) Organize activities of miao cultures. Through holding all kinds of the activities of the international and domestic miao cultures, such as "especially festival", "new day" festival activities, and art festival, biennale, international BBS, expand miao cultures international influence, Dan village of miao culture awareness.

(3) Protect master miao cultures. Folk arts and crafts masters provide superior development environment and policy support, in the capital, location, personnel, etc., meet the demand of its development. Dan village of miao culture in under the protection of relevant policy can be handed down from generation to generation.

6.2.2 National culture innovation

(1) Promote cultural creative industries. Miao unique artistic creativity, combining miao cultural and creative industries, such as film and television production, publishing, digital animation, art, media, etc., the Dan miao village "golden pheasant" motif. Will Dan village "batik", etc. Combined with modern product design, meet the demand of modern life.

(2) Implement share cooperation mechanism. Change the traditional pattern of families to operate small workshops, e-commerce, promote the joint stock cooperative system mode of operation, from order to raw material supply, design, production, sales, etc., formed a

complete industrial chain. Each village development unique industry, such as stone paper, Carla cage, etc.

(3) Promotion of miao cultures tourism. With the miao culture to build the characteristic tourism, culture and tourism benign interaction, the centralized development of state-level non-material cultural heritage inheritance, key villages of national culture tourism zone, longquan mountain provincial scenic area, east lake scenic area, ancient stone paper culture "Jia Wenhua" tourist scenic spot, longquan lake national tourist areas, mercury ruins of modern industrial development zone, admiralty economic development zone industrial sightseeing tourist area.

(4) Organizational culture tourism, design product line

(5) Development of cultural economy. With cultural structures, investment promotion platform, with introduction of ascension and expansion of the cultural project Dan village cultural strength. Through holding all kinds of large-scale activities, such as the ebo, tonggu mans tube lusheng dance "ten thousand people" and "cultural human-god cup" ox king, king king of birds, chicken type champions and investment promotion project negotiation and signing ceremony, such as the development of cultural economy, make the culture leading economy, gave rise to cultural economy, achieved the integration of cultural tourism

6.3 Characteristic industry development system

6.3.1 Industry positioning

(1) Characteristics of complex agricultural demonstration zone. With selenium zinc agriculture, traditional Chinese medicinal materials planting characteristic agriculture as the foundation, with modern efficient ecological NongYeYuan as a carrier to promote the development of characteristic agriculture; With intensive, highly effective, ecology, industrialization of agriculture development for the concept, build cooperate for the development of agricultural industry processing, distribution, leisure, tourism, etc to support the diversity of industry system, lead the Dan village from simple characteristics of agriculture to complex agricultural transformation and upgrading.

(2) Emerging manufacturing base

With the development of the western region, the eastern industry transfer as an opportunity, to industrial park development as the carrier, thanks to aid advantages, push Dan village into the group "are kay MaDan" town industrial division system. Strengthen Dan village in guizhou, chongqing, the pearl river delta, the beibu bay economic circle of the contact interaction, to admiralty economic development zone as the carrier, actively undertake the eastern industrial transfer, improve industrial, construction equipment manufacturing, characteristics of food processing, biological medicine, electronic appliances, textile and so on as the leading emerging manufacturing bas

(3) Original national culture tourist area. Relying on the national culture resources and natural resources, in hmong culture as the leading, blend in qiandongnan prefecture ecological group of hmong culture, as a whole development, strengthen the regional overall attractiveness. With golden pheasant dance, a stone bridge, ancient paper-making etc. Characteristics of culture as the leading factor, fully tap natural and cultural resources, accelerate the construction of scenic spots infrastructure, actively develop characteristic tourism products, and the surrounding region dislocation development, makes the original ecological ethnic culture communication platform and leisure resort.

6.3.4 Industrial space layout to guide

According to industry resources distribution, current situation and regional demand county industry development space can be divided into northern, central and eastern three characteristic industry development group.

6.4 Modern comprehensive transportation system

Adhere to the principle of coordinated development of transport and land use layout, transportation system skeleton is suitable for the urban land layout, reasonable planning of urban passenger traffic and freight traffic corridor, corridor from the macroscopic structure to prevent traffic conflict. Should adhere to the overall, harmonious and sustainable development, to build intensive urban transportation system, through the establishment of public transport, transportation as one of the diversified individual the coordinated development of urban traffic system, the development of adjust measures to local conditions and transportation network system.

6.5 Basic public service system

Carries on the comprehensive analysis about the present situation of urban public facilities, on the basis of extensive investigation and study, covering urban and rural construction, fully functional, social undertakings and public service system for the livelihood of the people.

7. Implement policies and Measures

7.1 *Set up the system of regional coordination, promote administrative division adjustment timely*

(1) Regional coordination organization. Set up "are kay MaDan" planning committee, joint participation, the relevant government and departments involved in the planning and implementation of land planning, public services, environmental protection, social affairs and other major matters to be agreed upon as a whole. Formulate efficient win-win regional cooperation mechanisms, to implement the regional planning goal and the tasks to each administrative region planning, use low levels of planning content and the specific measures, improve the implementation of the master planning requirements, realize effective cohesion of different level planning.

(2) Regional infrastructure to build system. As a whole and regional transportation network system. Comprehensive consideration for railway special line "are kay MaDan" area, rail transportation, logistics park and urban high-speed outer ring and ring net layout quickly, together build regional transportation skeleton, drive the regional overall development of north-south transport corridors, and reserved space for the construction of vision line network. Network as a whole to build regional municipal engineering facilities. According to the regional natural environment, facilities service ability and the urban development needs, achieve energy, water supply and drainage, electricity, telecommunications facilities and other large municipal facilities construction coordination cohesion, give play to the comprehensive benefit, reduce duplication of investment.

(3) Development of regional tourism system. Unification of regional tourism planning, building "are kay MaDan" tourist thoroughfare. Reinforcement and the surrounding libo, built leishan swallowed the miao, li from banyan area of scenic resource coordination and complementary advantages, give play to the comparative advantage, form a diversified regional tourism routes.

(4) Regional security system. On regional ecological construction, based on the natural environment characteristics and the target of urban construction, unified defined the basic farmland protection areas, water source protection areas, etc. The construction area protection line, to guide the concrete construction and space governance measures are put forward in the key areas.

In regional security, considering flash floods, landslides, debris flow and other natural disasters prevention requirements, partition graded protection measures, over the ground in a high-risk area of residential areas in combination with urban construction plans to move as a whole.

(5) Administrative division adjustments. Timely push Dan village administrative division adjustment city and its surrounding areas (such as township removal, etc.), admiralty economic development zone and uplift Wu Xiang ChangQingXiang) after (including removal,

burn tea industrial park and XingRenZhen take area town and mode respectively. Backward area village relocation and point the project implementation, guide the rural population to urban organic concentration, perfect infrastructure and public service function, promote the urbanization process.

7.2 Strive for national policy support, the construction of the miao cultural tourism innovation zone

(1) Cultural heritage. For the miao culture resources protection and cultural brand applications to provide support for the legislation, funding, application priority policy guarantee, etc. Construction of miao culture show policy, encourage decentralized XiangDongHu perimeter zone partition cluster culture resources, promote the city characteristics, ethnic customs.

(2) Culture to carry forward. Construction demonstration area of the miao culture experience, development of folk art performances, folk art education, nationality, ethnic cultural information of the production process such as industry, the formation of professional management groups and industry cluster.

Miao culture festival activities, which are held on a regular basis to carry out the "east lake miao cultural BBS" and "fair" miao culture, strive to foster a culture of good investment environment, establishing the image of urban culture brand.

(3) Cultural development. Optimize their travel network, set up regional tourism channel node, Dan village cultural tourism into a regional characteristics of regional tourism system. Build in cultural entertainment industry, cultural tourism brand as the core of culture, arts and crafts industry system, build cultural industry chain, and drive traffic, catering, hotel, etc. The development of relevant industries.

7.3 Construction of mountainous industry breakthrough development model in ethnic minority areas

(1) Industry on policy. Clear economic threshold of foreign industry admittance, improve external industry access standards, formulate corresponding transfer policies and regulatory measures to prevent the backward production capacity and transfer to Dan village heavily polluting enterprises. Formulated to promote industrial transfer of land, credit, fiscal interest discount, tax incentives and other preferential policies. To strengthen the construction of market integrity and optimizing trading environment, reduce market transaction costs. Build service government, responsibility government, safeguard the legitimate rights and interests of investors.

(2) Policy of industry transformation. Promote the resource-intensive industry technology upgrades, such as iron and steel casting industry to the high-end equipment manufacturing industry development. Guide development lag industry forms the transformation, such as agroforestry to biomedicine, new energy, environmental protection industries, emerging industries such as transformation. Construction service enterprise vocational education training system and technical research and development institutions, to develop the financial sector, advisory planning, product design and logistics services, producer services form production, the integration of science and education industrial park.

(3) Industry promotion policy. Zinc selenium m, iberico agricultural resources advantage, such as the construction characteristics of agricultural and sideline products deep processing base. Apply for funds and policy support national characteristic industry, the resource advantage into industry advantage, strengthen the development of clean energy, environmental protection industry and ecological resources. Aid assistance to apply for big investment projects at the provincial level, around the core industry of the cluster system, formation of city economic pillar.

7.4 Improve the poverty-stricken areas out of poverty in guizhou and enriching policy system

(1) Immigration policy. Yang Wu Xiang, longquan town of resettlement facilities such as construction, provide a good living environment and the public service condition. Construction of vocational education park, for immigrants in employment post information

and skills training. Future urban development considering industry selection and development zone construction requirements, implement "new immigrants" to "move the industry people", to facilitate immigration to work

(2) Life safeguard policy. After ecological migration into the city and urban residents enjoy the same education, medical treatment, employment, pension and other social welfare policy. Ecological migration after the circulation of right to the contracted management of land, the government will retain its original enjoy national treatment of peasants, agriculture remains the same.

(3) Entrepreneurship support policy. Ecological immigration application startup loan amount will enjoy support, and the corresponding interest preferential policies. The government will according to the immigration self-employment performance give part of the tax incentive policies. Governments at all levels provide appropriate technology and information support for immigrant entrepreneurship.

7.5 Implement a full range of talent services policy

(1) Implementing talent service preferential policies. For the introduction of high-level innovative entrepreneurial talent and are in urgent need of special talents shortage, in the county enjoy household registration, housing families, funding, and employment, insurance, their children to school and go to a doctor to give the preferential policy, title evaluation, etc, and convenient service.

(2) Implementation of personnel salary subsidy policy. According to the talent introduction work contribution and innovation performance, leading role and influence the industry standard, according to give corresponding compensation. To introduce talents of scientific research or work at or above the provincial level awards, give corresponding material rewards.

7.6 Build open inclusive city spirit

(1) Enlightened government image, build open policy environment. Through effective policy incentive and guarantee mechanism to motivate the county entrepreneurial enthusiasm, create a Dan lasting impetus of the development of the walled city. Improve the scientific decision-making mechanism, implementing public opinion reflecting mechanism and working mechanism, formation of Dan village management orderly and dynamic policy environment.

(2) Highlight the inclusive thoughts lead and promote the city construction of humanistic spirit. Dan village tolerance open, advocating development atmosphere, cultivating citizen's social morality, professional ethics, family virtues, and form a unity and mutual assistance in the whole society, the poor, understanding, tolerance, harmony and harmonious social atmosphere, enhance the social civilization degree of Dan village and cultural development level. Set up the Dan village win-win co-prosperity cooperation idea, carry forward the works together, unity cooperation style. Dan village of self-interest and the surrounding interests, partial interests and overall interests, immediate interests and long-term interests, the combination of solid effectively open and mutually beneficial cooperation.

(3) Set up the eclectic, open atmosphere of the city's image. Emancipate the mind actively, advocating all rivers run into sea, upholds the Dan village, learning advanced experience of the developed areas in the open, show Dan village and vigorous atmosphere, open thinking, eclecticism, acceptance, dare to innovation, from the city's image. Will Dan village open inclusive city spirit rooted in production and life practice, into a group of people's consciousness and behavior.

With implements of our Strategy, more and more MIAO migrated from the depth of mountains to new cities, Living and working peaceful and harmoniously. Our Practice has proved that ecological migration can have win-win effect of economy and people's livelihood. Hope it be a good reference for ecological migration in the world.

DANZHAI, a poor county in southwest China has an ethnic minority MIAO, whose totem is "golden pheasant". 'Strategy Planning of Urban Space Development' promoted coordinated

development of urban and rural areas, implemented poverty alleviation and ecological migration, proved that ecological migration can have win-win effect of economy and people's livelihood.



Figure 1: Location in Guizhou, China

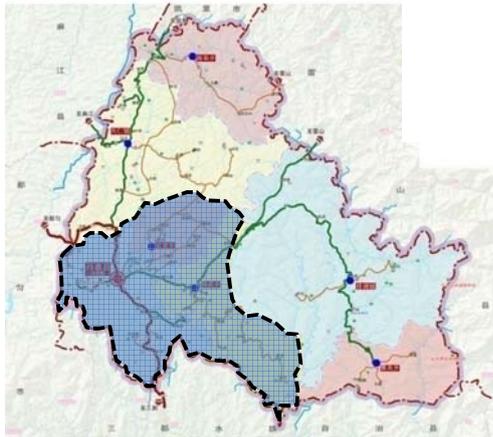


Figure 2: Focus Planning areas

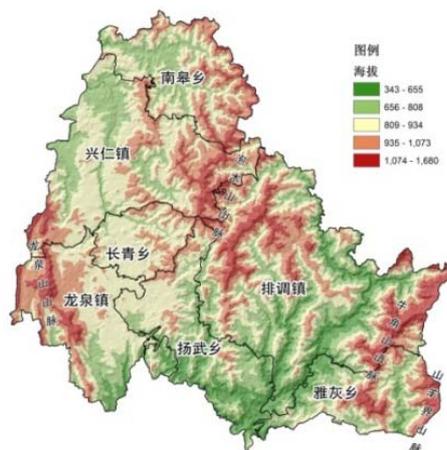


Figure 3: Terrain analysis



Figure4: Intangible cultural heritage

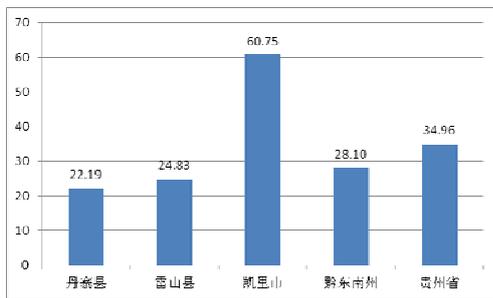


Figure5: Urbanization of Danzhai and its surrounding areas

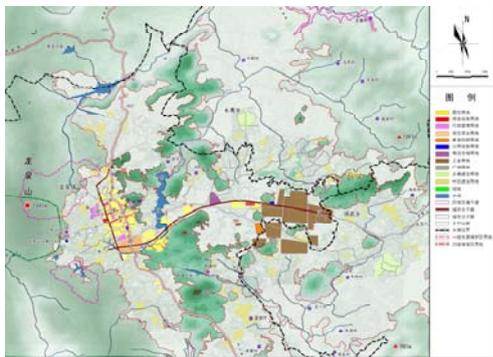


Figure6: Land use situation

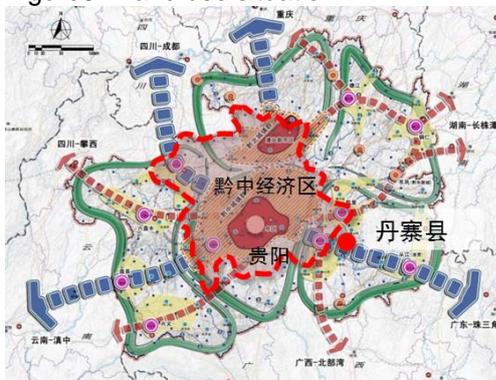


Figure7: Urban spatial structure in guizhou



Figure8: Golden pheasants Culture

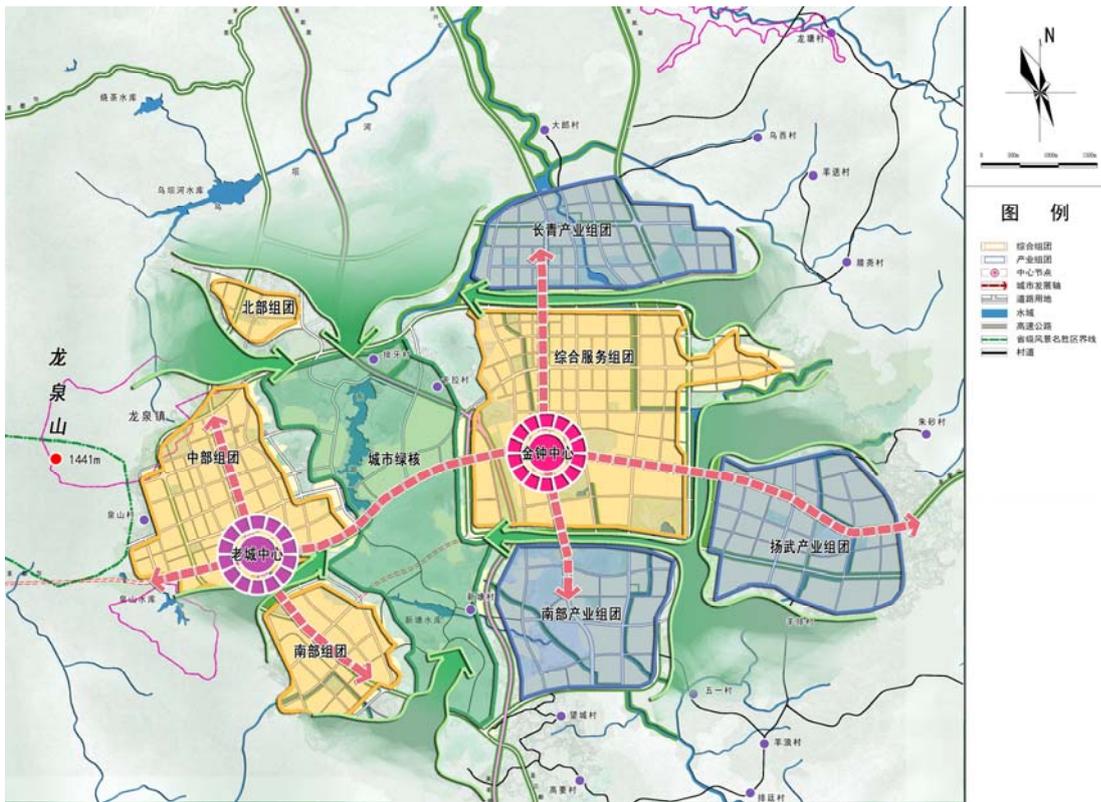


Figure9: Space structure

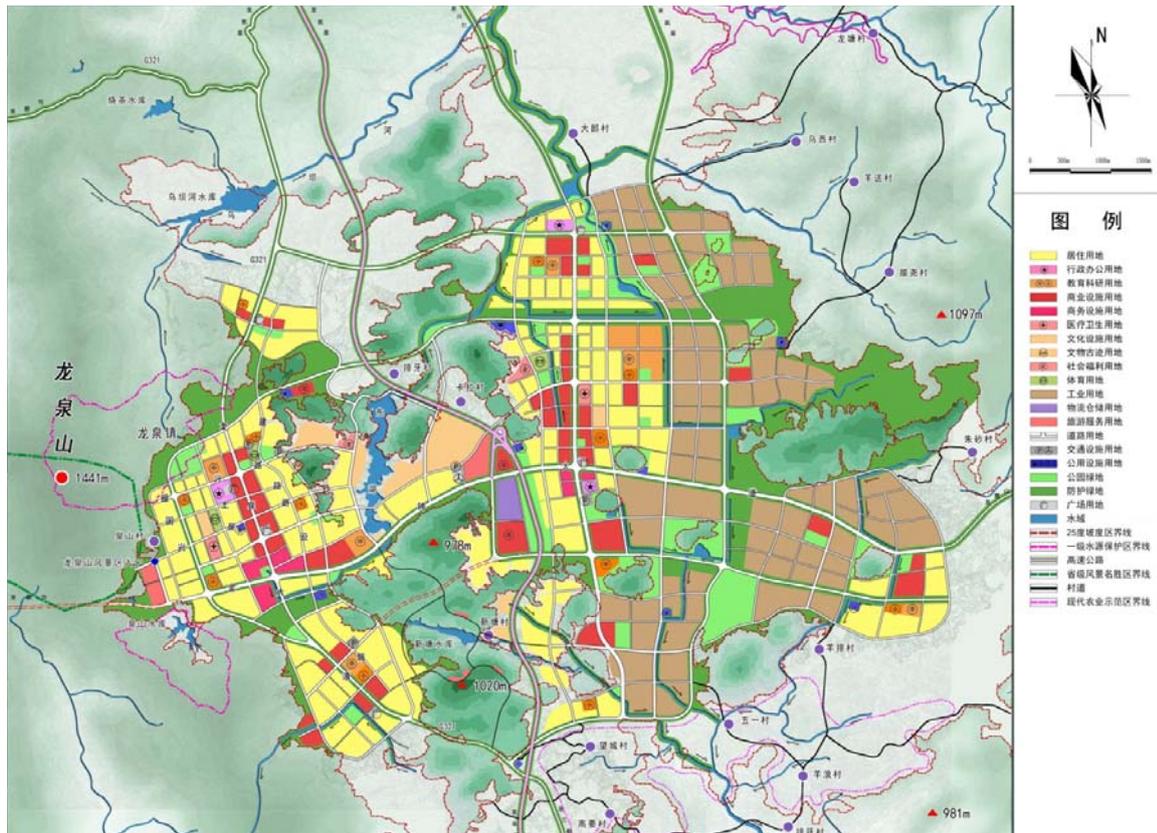


Figure10: Land use plan

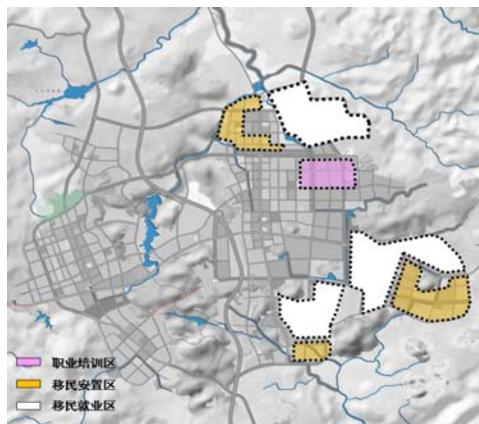


Figure11: Ecological resettlement and employment

Equalization of Public Service Facilities for Tourist Cities**Equalization of Public Service Facilities for Tourist Cities
- Case Study of Sanya's Downtown Public Service Facilities in the
Planning Process**

Fei WANG, Wei Wei, and Ming LI, China academy of urban planning and design, China,

1. Background and proposition

The achievement of equalization is a core idea of public service facilities for a city. It is also an important way to achieve society justice, reduce the disparity between urban and rural areas, the rich and the poor, as well as other negative impacts of imbalanced development. The approaches to achieve the equalization of public service facilities are quite different, depending on the main function, spatial pattern and population composition in a city.

As one of China's most representative tourist city, tourism has become the pillar industry in Sanya, which is the strongest drive for economic growth and also a major factor impacts its sustainable progress. After ten years of growth, Sanya is experiencing an explosive increase in terms of both its tourist number and tourist production value. Seasonal population agglomeration brings huge challenges to the supply of public service facilities. Problems such as land for public service facilities occupied by the overwhelming development of tourism real estate, inadequate supply and low quality of service facilities for local residents are becoming more and more serious. Under the background of seasonal population vibration and periodic demand variety on public service facilities, how to satisfy the different needs of tourists, migrant people and local residents, taken the population distribution as a point of breakthrough, becomes the primary aspect to rationally allocate the public service facilities in the tourism districts featured by dramatic population change.

2. Problems and cruxes***2.1 The periodical change in demand on public service facilities caused by seasonal population change***

With the proposal of global tourism island construction, as the most beautiful beach scenery all over Hainan Island, Sanya gets astonishing development in the tourism industry. Also, the amount of tourists and migrant people for rehabilitation are dramatically increasing year by year and take large percent in the foreign population. Considering the complexity of population composition and the feature of seasonal tourism population change, through the population census and calculation, the people in Sanya could be divided into three groups by the character of the seasonal movement and stay:

The first group includes about 500,000 people, comprised of local residents including registered permanent residents and floating population, the growth rate of which is comparatively stable. The second group, 200,000 people in all, is migrant people who usually live in Sanya for half a year mostly from November to next April for retirement leisure and rehabilitation. The third group consists of tourists for short-time stay at an average of 100,000 persons a day. Based on the statistics of 12 months in a year, the daily average number in the peak month could reach 130,000 while the lowest is about 70,000.

Equalization of Public Service Facilities for Tourist Cities

Considering these three groups, we have found that the periodical change of people in Sanya is obvious because the lowest amount is about 600,000 while the highest is up to 1,000,000 at the same scale as a city. (Figure 1) As a result, the generic approach of allocating public service facilities is apparently not applicable for we are confronted with 2 completely different urban sizes.

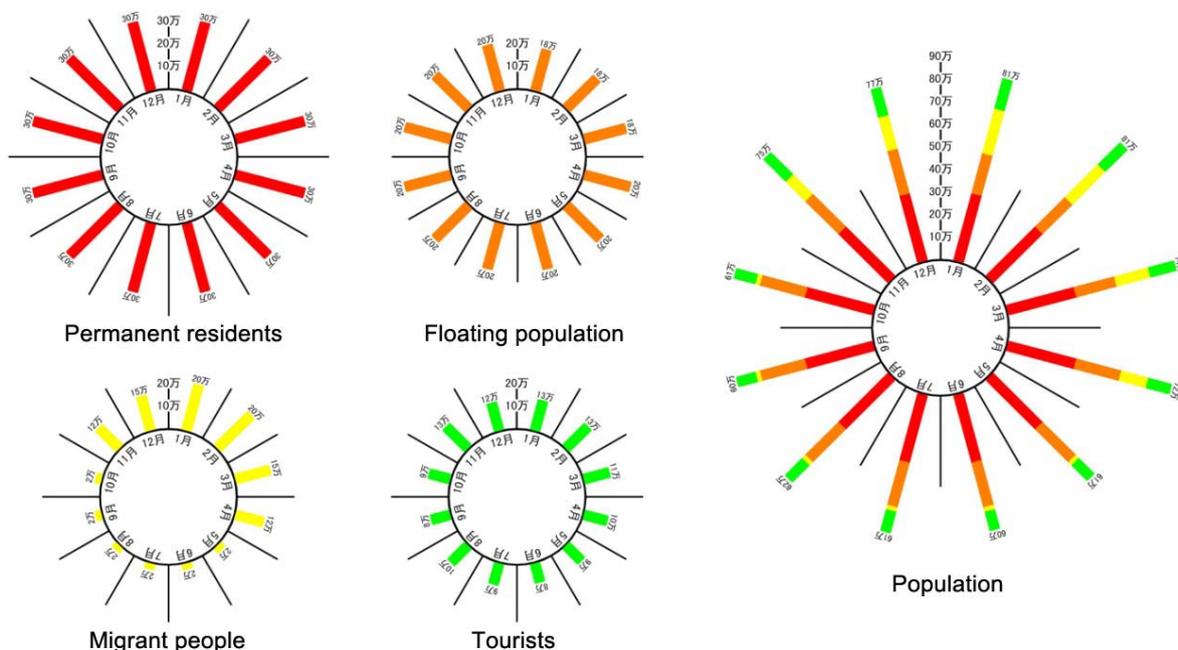


Figure 1: image of demographic composition in Sanya's central urban district (resource: drawing based on related data)

2.2 The land for public service facilities occupied by the overwhelming development of tourism real estate

The real estate has become the pillar industry in Sanya, making huge contribution to the tertiary industry in this area. In 2009, the real estate accounts for 40 percent in the gross value of tertiary industry of Sanya; the number grew to more than 50 percent in 2010. Apparently, this situation is closely related to tourism boom. The development of Sanya's real estate mainly relies on the growth of tourism. That is to say, the overwhelming and mighty development of tourism brings large opportunities and potentials to the real estate. Sanya's housing price, in Sanya in 2011, jumps into the top ten highest ones in the whole country, whose growth sits the first place nationally. From that we can see the development of real estate contributes a large part to the whole city's economic development.

However, some social problems come along with the boom of real estate, for example, the migrant people causing high housing vacancy rate in Sanya up to 95 percent in some residential area; local residents are forced to move to the fringe area of city because of high housing price. Comparing the master plan in 1999 and the situation in 2008, the percentage of residential land increases more than 20 percent while the green space decreases 30 percent, and public service facilities remains almost at the same level. On the data of granted land types from 1991 to 2007, large amount of residential land were sold. Conversely, the amount of public service facilities land goes down. The planned lands for city political center

Equalization of Public Service Facilities for Tourist Cities

in the master plan of 1999 were adjusted for real estate use in 2008; the land for sports center was used by tourism facilities land. It is a specific example to demonstrate the impact of real estate on public service facilities.

Recently, the tourism development has been more focused, which would bring huge and immediate economic benefits while the investment in the fields on education and culture reduced. Taking the advocacy plan of key projects in 2010 as an example, we can see these programs on tourism and real estate are still the top priority. (Figure 2)

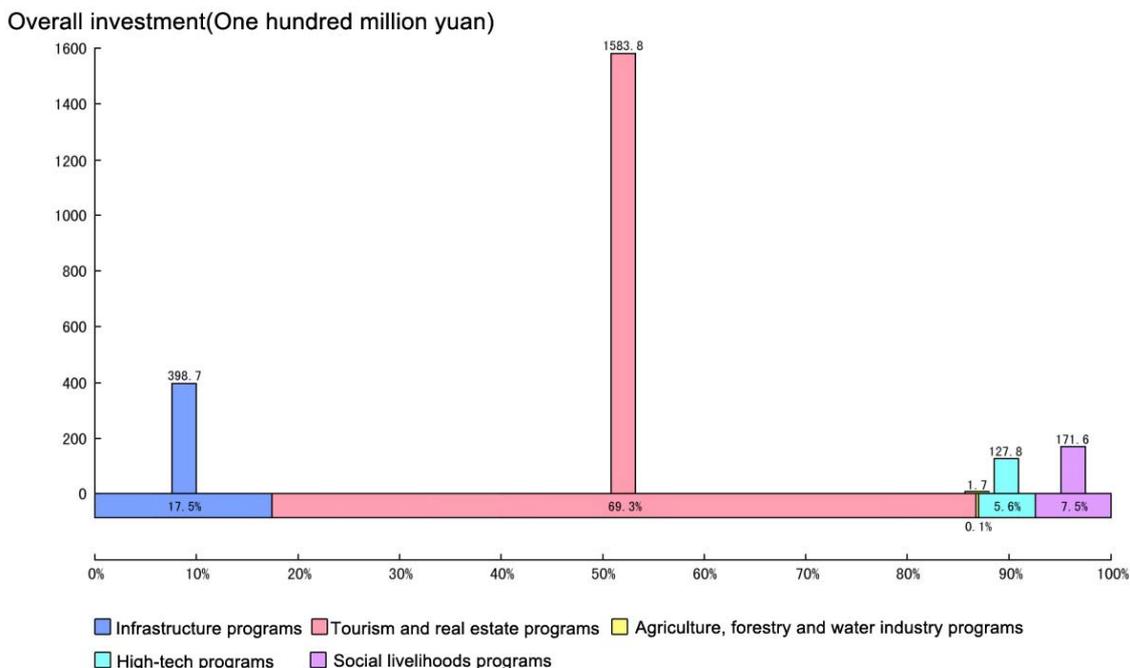


Figure 2: statistics chart of investment in Sanya’s key projects in 2012(resource from: Sanya Sta. Almanac)

2.3 The issue of public service inadequacy and backwardness for local residents is increasingly prominent

With the boom of tourism, the high-qualified waterside resources attract large number of real estate investors. Public welfare and tight profit service facilities can hardly maintain under this market-oriented seaside district. The vitality center designed in the master plan is almost the last high-quality space for public service facilities. At the same time, the good landscape resources in the inland waterfront have been occupied by real estate. (Figure 3)

The old districts renovation in high-quality waterside resources is facing the same problem: local residents move out while many foreigners crowd in. The high-incentive development cannot help to better the transportation in old districts but bring more stress. After renewal,

the facilities will be upgraded to a higher level that will virtually worsen local residents facilities-inadequacy problem.

Equalization of Public Service Facilities for Tourist Cities

The inappropriate renewal to old districts actually destroyed the local culture accumulated for a long time. The time visitors stay in Sanya is shorter than the other scenery resorts in foreign countries (Table 1). One of the most important reasons is that Sanya need more experience and exhibitions about local culture to attract visitors. The visitors enjoy the first several days in the hotel, however when the fresh feeling for the sea view diminished, they of course hope to experience the local culture and way of life, so the holiday resorts that could provide colorful local cultural experience will maintain visitors long time here.

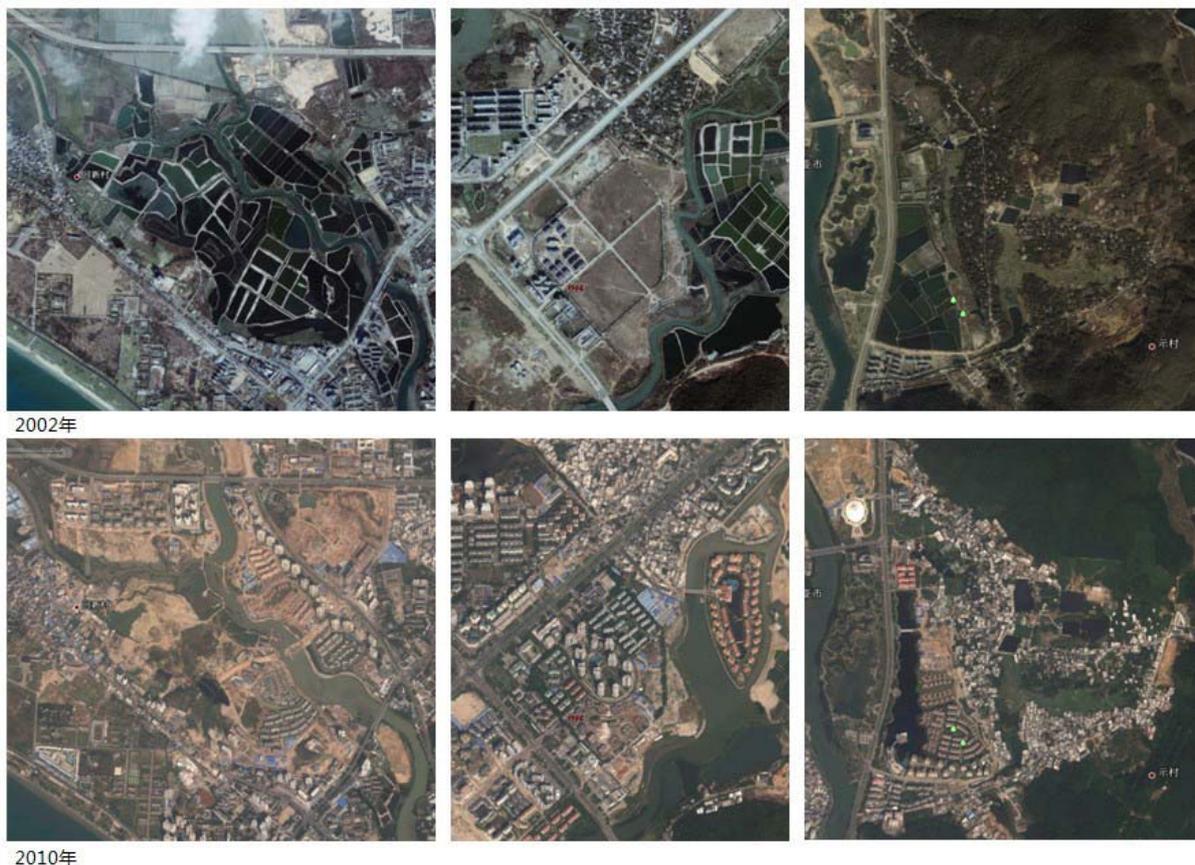


Figure 3: comparison of Google maps on inland waterfront real estate in 2002 and 2010 (resource: Google maps)

Table 1: comparison tourism details in global famous scenery resorts (resource from: Sanya’s master plan)

Global famous tourism resorts	Cote d'Azure		Costa del Sol in Spain	Gold Coast in Austria	Miami	Southeast Asian		Hawaii	Cankun	Sanya
	Nice	Cannes				Bali	Phuket Island			
Tourists amount(millions)	4	2.5	9.5	4.55	10.4	1.66	5	7.62	3.27	10
Annul income (billions)	€2	€1	€7.7	A\$2.5	\$1.5	\$0.7	\$1.2	\$12.8	\$3.6	\$2.6
Personal spending	€ 500	€400	€810	A\$550	\$114	\$415	\$257	\$1680	\$1110	\$260
Average stop days	7.4									
Daily spending	€	€	€	A\$	\$	\$	\$	\$	\$	\$

Equalization of Public Service Facilities for Tourist Cities

2.4 The imbalance distribution of public service facilities

From Sanya's spatial development of urban form in recent years, the development of the water overweighs the development of land. From the 1989 to 1999, the city sprawl is mainly along the sea side; from 1999 to 2009, the development came forward in great number of the high-qualified landscape resources inland when the seaside land is continuously been used; after 2008 till now, the high-qualified resources land in old city has been renewed and reconstructed came out one after another.

From Sanya's existing distribution of the public service facilities; the development in central city is much more advanced than that outside of it. The public service facilities concentrated in the center (Figure 4). For a long period, all kinds of public service facilities locate mainly in the old city along the both sides of the river, which largely decide the democratic distribution of different districts. Seeing from the relation between locations of all kinds do public service facilities and migrant communities, the new communities where most foreigners chose to live in show the trend of embracing the area along the both riversides where public service facilities are the densest. These foreigners enjoy the convenience of the public service facilities while contribute less for the city's facilities. The facilities in old city are overused while those in new city are inadequate. This brings several urban problems such as population agglomeration and space density and traffic jam. Using public service facilities to attract population flow is an important way to release the transportation pressure in old city, to lead the completion of public service facilities in new city by placing major construction facilities. Meanwhile, the seaside could be leaf for cultural facilities which could much more present the essential characters of city and provide service for local residents and tourists.

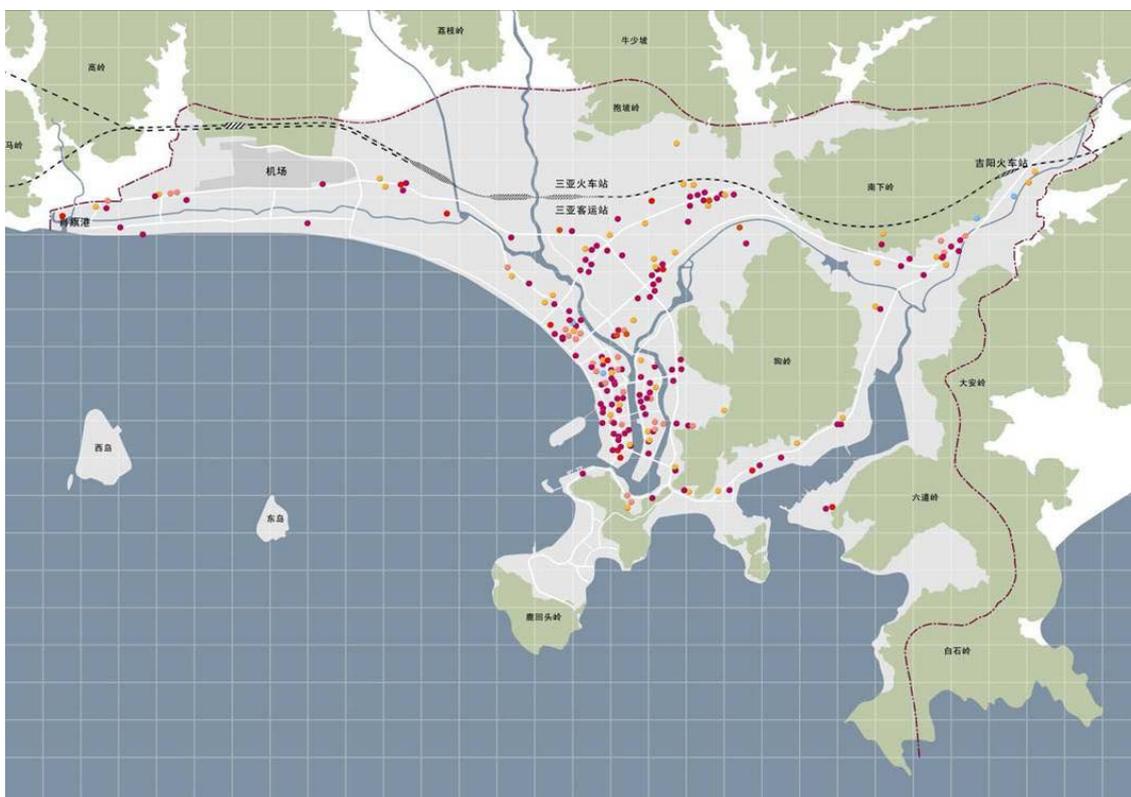


Figure 4: map on Sanya's existing facilities distribution of public management and public service (resources: imaged on data)

Equalization of Public Service Facilities for Tourist Cities

3. Strategies and methods

3.1 The public service facilities zoning by the population distribution

If we analyze Sanya’s urban spatial structure from the view of population distribution, we can find three classes of region: the first is the population agglomeration area in Yalong bay district, Luhuitou mega east sea district and Haipo district, which three districts largely affect Sanya’s urban space structure; the second area highly mix local residents, tourists and migrants people including Jiyang district, west side of river and Sanya bay. These three groups of people correspondingly locate in these tourism districts; the third is the main area where inhabitants and migrant people concentrated including east side of river and Yuechuan district. Sanya’s urban space structure(Figure 5) is clearly collated that the peripheral area function as tourism containing three seaside tourism districts and north face mountain tourism district; the neighbor area consists of three tourism service living districts; the local urban living districts were surrounded by the formal area. From the angel of human usage of facilities, this spatial structure is the ground how we locate public service facilities. (Figure 6)

The core value of public service facilities is to be utilized by people. It is apparent that different people have various demands for facilities, like in Sanya, local residents do not necessarily go in the tax-free shops but cannot live without the food market; migrant people may not have children who need to go to school but hard to avoid to go to hospitals; tourists could stay without the need to see a doctor for several days but must go to have seafood. All groups of people have different needs for facilities and their activity areas differ from the distribution of all facilities, which in fact deny the realizing of impartial principle. So actually, what we try to do is not to achieve the impartial on space but on service, which means all kinds groups could be satisfied.

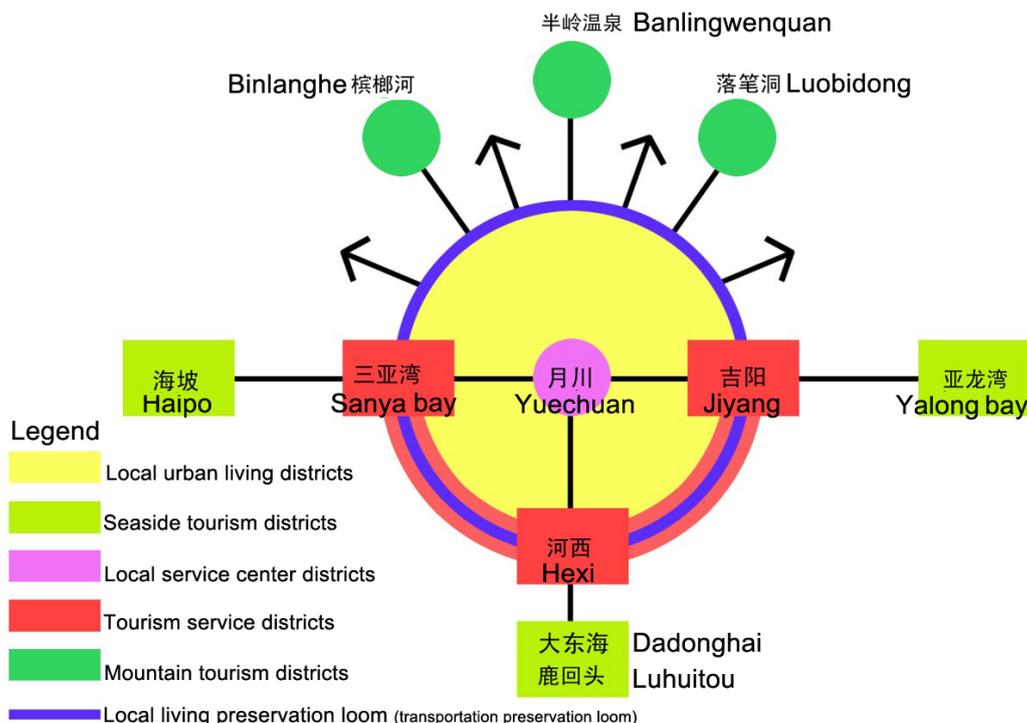


Figure 5: image of Sanya’s urban special structure

Equalization of Public Service Facilities for Tourist Cities

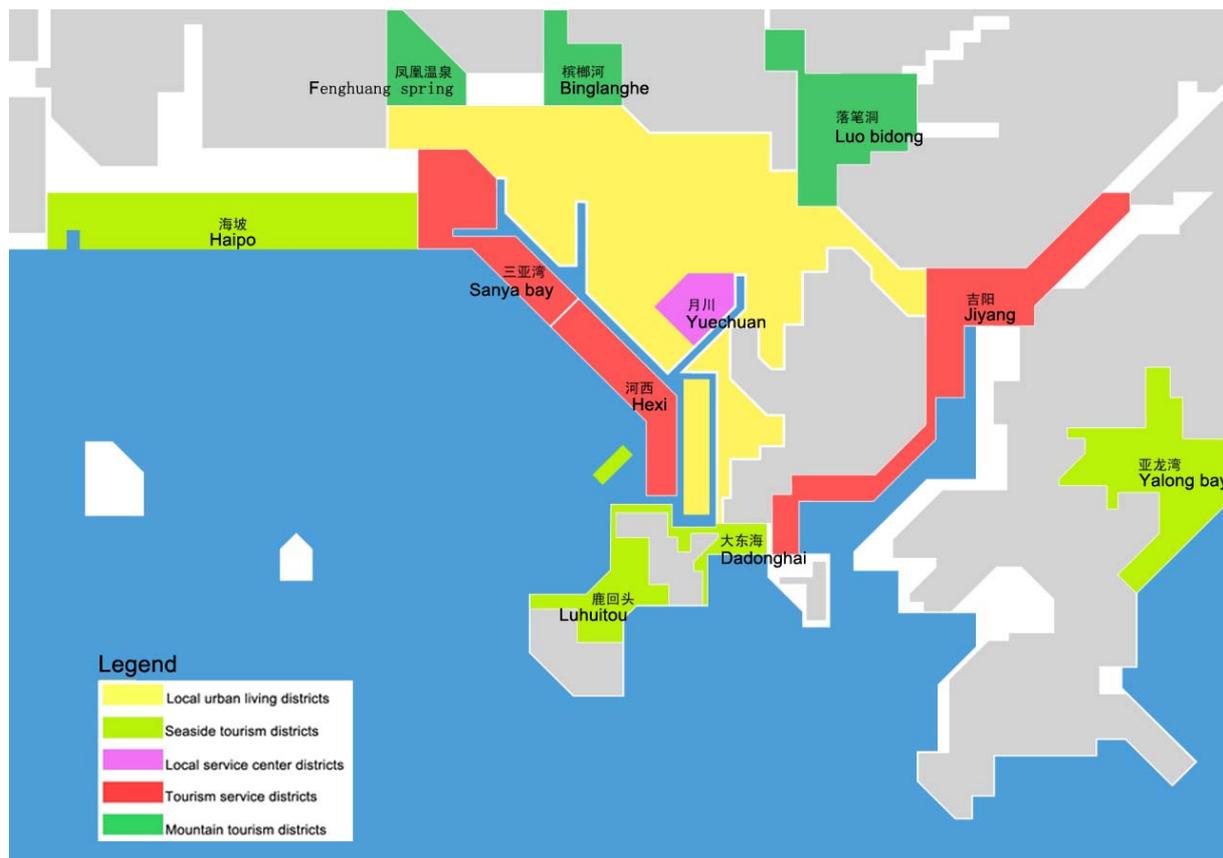


Figure 6: map on Sanya’s existing facilities distribution of public management and public service (resources: imaged on data)

3.2 The classification of Sanya’s public service facilities basing on urban spatial structure

On experience in Sanya and other cities, there are three grades of Sanya’s public service facilities, besides the public construction on city level, the facilities for residents could be divided into two grades in terms of residential district and dwelling district. The facilities on the residential area have direct connection with jurisdiction management as well as the political grade in the future. Within the wards of neighborhood political management range, which could be divided into several communities, the public service facilities both on the neighborhood level and community level could be constructed and assessed by city management departments together with neighborhood management organizations.

Depending judgment on Sanya’s urban function structure, we recommend service centers on city level to be classified on the service subject groups, which two kinds are integrated service centers for visitors and diverse residents and local service centers for local residents. The integrated service centers separately locates in three tourism districts which are featured by retail and catering in west riverside, cultural district in Sanya bay and local landscape style in Jiyang town. Local service centers are Yuechuan district functioning as commercial district and Baolingpo district centered for administration. Differing from master plan, we take Jiyang town as city service center to enhance service quality for Yalong bay and local residents, which would benefit to release old city’s pressure and to extend Jiyang’s urban function. In all, there are five service centers on city level.

Equalization of Public Service Facilities for Tourist Cities

On different service subjects, service centers on neighborhood level could be divided as tourism service centers and residential service centers. Tourism service centers are in Yalong bay, mega east sea district and Haipo; while residential service centers are in north city, Haidong, Jixiang and Hedong. Service facilities on neighborhood level will respond to the management district by municipal district office in the future. Each office will in charge for forty to sixty thousands of people. In all, there are three tourism service centers and four residential service centers. (Figure 7)

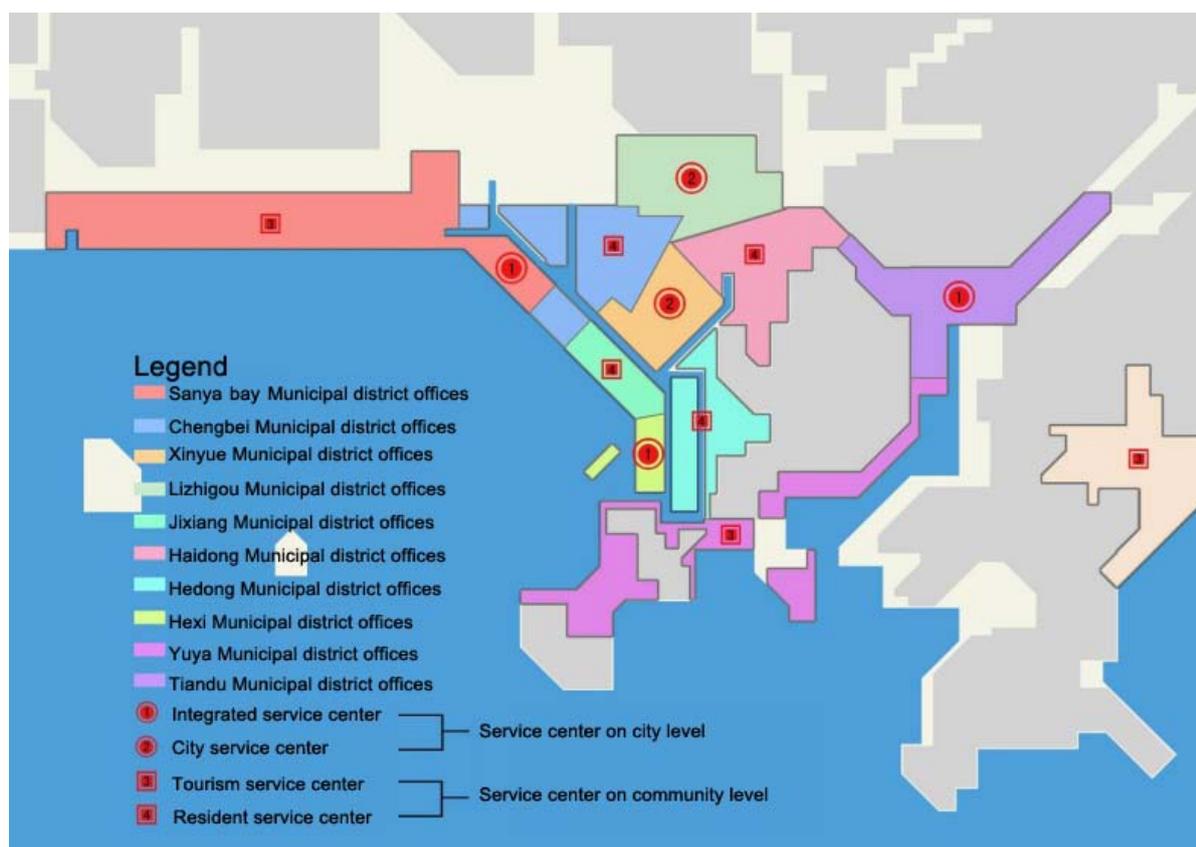


Figure 7: map of distribution Sanya’s graded public service facilities

Service centers on residential sub-district level could be defined as divided neighborhoods based on the rules of six to twelve thousands of population and service radius. Each community can form its own service center. Its specific bound could be decided by each district and town or the probable municipal district office as well as concrete conditions with community residential committees.

3.3 The pointed strategies to Sanya’s existing conditions

With the responsibility to build Hainan’s international tourism island, Sanya still looks no big difference with other Chinese general county towns having several city problems. So we should not only be object-oriented and allocate public service facilities at the highest quality to respond the targets, but also problem-solving-based to find the crux of urban problems, that is how we fix the diseases and prescribe a medicine catered to them, so to speak. The following three points represent how we would do that.

The first is using plans and guidance to overcome uneven distribution, which is aimed to lead the completion of public service facilities in new city by placing major construction facilities.

Equalization of Public Service Facilities for Tourist Cities

We highly recommend central administrative function planned in center of new town, because administrative center has the strongest power on urban layout in all the city government controllable resources, which could also effectively affect other urban facilities gather around to solve impartial distribution of public service facilities. Meanwhile, the seaside could be leaf for cultural facilities which could much more present the essential characters of city and provide service for local residents and tourists.

The second point is to end the real estate sector's strong presence by management, which means strictly enforcing and implementing the plans, to insure public facilities, especially the public service facilities. To build classification of municipal district offices and community residential committees, so that these service facilities on residential level and community level can have clear jurisdiction subjects. The construction, management, operation of these two grades of public service facilities should be connected with the working achievement of municipal district offices and community residential committees.

The third point is to rebalance the people and housing by policies, specifically to make zoning policies on different zoning characters. Within tourism districts, the real estate development types should be restricted mainly in range of vocation and tourism use, only permit for timeshare and property resorts; in the districts about tourism service, encourage family hotels to help more local residents enjoy the benefits from tourism industry. Some percentage of real estate is handed over to government for use of affordable housing. In the local living districts, the dominant function is service for local dwellers' living and working, where development on affordable housing should be incentive.

4. Conclusions and revelations

In conclusion, we explored the effective methods for allocating public service facilities in areas with a complex population composition and proneness to changes. Under the core principle of public service facilities development, we try to establish a specific system plan of public service facilities to represent Sanya's city characters and the achievability of plan production assisting local government to implement and manage. The achievement of equalization of public service facilities is not solely an even distribution of facilities, but to provide public service equalization according to the requirements of different crowd.

Equalization of Public Service Facilities for Tourist Cities

References

Luo,zhendong, Wei,jianglv,and Zhang,Jingxiang,(2011), "The definition of equalization development on fundamental public service facilities in urban and rural area", *Journal of modern urban research*

Urban land classification and land use on planning and construction standards (GB 50137-2011), ministry of housing and urban-rural construction of the People's Republic of China.2012,

Allocation order on public service facilities in urban planning in Hangzhou city, Hangzhou city government, 2009

Allocation standards and plan guidelines on public service facilities in Qingdao urban districts, Qingdao planning department, 2010

Allocation standards and plan guidelines on public service facilities in urban and rural planning, Chongqing city planning apartment, 2007

Sanya city master plan from 2008 to 2020, Sanya city planning department

Sanya Statistics Almanac, Sanya statistics department,2010

To Alleviate Spatial and Social Divisions by Modifying Grids: City Planning and Social Orders in Ancient Multi-ethnic Chinese Cities

Xu Yibo

Politecnico di Milano

1. Introduction

This paper is part of the research into the connection from grid to social orders. It attempts to explore the process of integration of immigrants and the design of grid to alleviate the conflicts between different ethnical groups.

Four cases are presented to explain the process of immigrant integration. The former three are historical examples in ancient China on the 'multi-ethnic' cities. They are the division of clans in Western Zhou dynasty in 8th century BCE, the mix of Chinese and Nordic cultures in 13th century CE and the multi-ethnic Chinese border cities in 19th century CE. The last case is about the transformation of Chinese ghettos in Milan, Italy. Though from different historical strata and location, they all present the issue of Frontier where different ethnic groups meet, trade, conflict and finally integrate.

The article will examine the cases from following aspects: the historical background, the economical, cultural and political conflicts and integration and the grid as spatial tools in creating the space for integration. Four cases share the similar model of social integration. In this process, grid is the physical interference as the reflection of the decision from rulers upon the social orders.

The study is written for planners and governors who are engaged in this immigrant Frontier issues. The lessons from historical and contemporary social integration can provide possible references in the political decisions and the planning of grid.

2. The Initial Spatial and Social Exclusions upon Clans in Ancient Cities

The first chapter is a description on the ancient Chinese tribal kingdom (20th centuries till 7th centuries) when first spatial and social exclusions of clans happened under massive migrations.

The primitive tribal society constructed upon local clans. The hierarchy is simple as families and the cohabitant with alien clans did not exist. This social system existed in ancient kingdoms like Xia and Shang dynasties (20th till 10th centuries BCE) where king is supported and surrounded by royal and noble clans, political and spatially.

Massive migration appeared in Western Zhou dynasty (10th till 7th centuries BCE), clans migrated, conflicted and integrated in different regions. It was the time first *Frontier* happened. Different clans coexisted in one city, strived for limited resources, controlled and excluded politically and physically. Walls are built to demarcate zones and the alien clans were excluded from the king and noble clans. (Loewe & Shaughnessy, 1999)

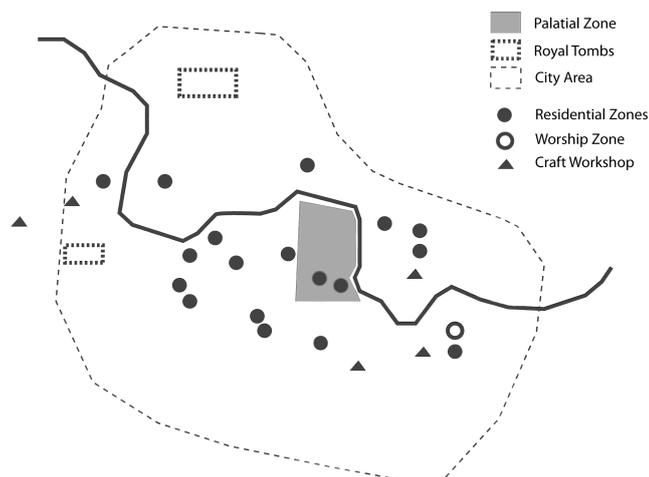
The following cases show that 'to exclude is inevitable initial choice when facing immigrants' even from the beginning of civilization.

2.1 The Centric Layout Capital with Solo Clan

The last Shang's capital, Yinxi (1300 BCE) was an assembly of tribes and small cities with a big area covering 300 thousand hectares. It was on the south bank of Huan River, on a higher terrain near the river. Shang King's Clan territory was in the centre, surrounded and protected by other noble tribes. It existed as gathering point of Shang clansman even after the Dynasty end by Western Zhou Dynasty. (Loewe & Shaughnessy, 1999)

The centric part is the Palatial Zone protected by moats. It was a planned rectangular area with 1100m long south-north and 650m wide east-west. The moat was the symbolic and physical boundary of the royal territory. There was no wall probably due to its strong military forces that multi-layers of Shang clan tribes protected it in the centre. Other handicraft, residence and cemeteries scattered affiliated to each surrounding tribes. Among different functional zones there were vast blank areas probably for cultivation. (Kwang , 1986)

As a capital with single Shang clan, the city did not divide or exclude any groups and zones. All tribes surrounded the king clan in the centre and create a centric layout. This type existed in most tribes (before 10th centuries BCE) when the massive migration did not appear and the mix of clans did not happen. Or to say, it is primitive model before the appearance of Frontier between different ethnical groups. (Xu, 2000)



Caption 1: Plan of Yinxi City, the Centric Layout (Xu, 2000)

2.2 The Capital to Exclude Migratory Clans

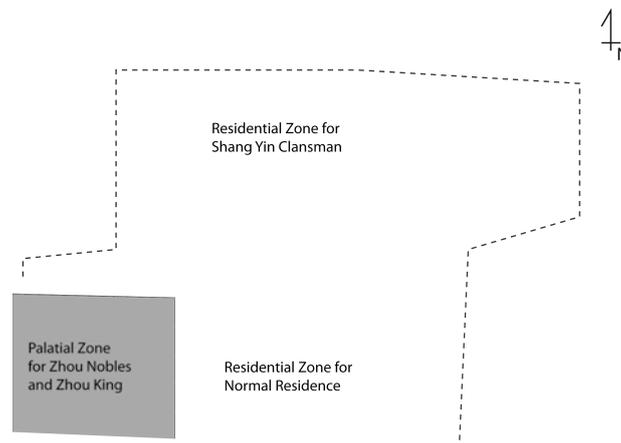
After conquering Shang dynasty (10th centuries BCE), in order to weaken the power of Shang clans and control more territories, King Zhou, the leader of Zhou clan forced Shang clansman to migrate to remote regions, therefore remix the clans in all China. The first migration of different clans happened (10th till 7th centuries BCE). (Loewe & Shaughnessy, 1999)

However, the Shang clansman and other alien clans often made revolts. Thus the previous centric layout was not feasible in sense of safety of Zhou King and his noble clans. In the new capital of Cheng Zhou (currently southwest of Luoyang) a new spatial grid for social exclusion was designed to divide the clans. (Kwang , 1986)

The city consisted of two adjoined parts, on the west was a small palatial city and on the east was a large secular city. They were designed to separate the clans. The west city consisted the palace of King Zhou and other noble halls while the east secular one inhabited

Shang clansman, other migratory clans and the military troops of King Zhou, as a tool to surveillance and control the alien clans. (Yang, 2006)

From the liturgy, the western part also represents the supremacy over the eastern part. In ancient ideology southwest was a symbol of wellness. Nobles preferred to live in the southwest of the city and considered northeast as unlucky. Therefore, to show off the superior rank over other clans, the palatial city was created in southwest with halls and temples on high-platforms. According to this liturgy, the main gates, royal halls all faced eastward. In Chinese, it was called 'Sit in West and Face East', the king overlooking the subjects in the east. (Yang, 2006)



Caption 2: Plan of Chengzhou, the west-east separated city (Yang, 2006)

The above history shows the transformation from solo clan into the multi-clan. The initial spatial and political reactions towards the alien immigrants are to exclude. Walls are built and zones are demarcated to separate Zhou clans and alien clans. In politics the alien clansman are degraded as slaveries and cannot serve army, have lands or enter political discussions. Understandable, it is part of the intrinsic self-protection of human being, whenever there are aliens, the initial reaction is to reject, self-protect and exclude, at scale of social groups.

3. Assimilation of Chinese and Nordic Ethnics in Nordic Cities

In second chapter, we forward the history to the era that central China was occupied by Nordic ethnics, Khitan, Jurchens and Mongolians (11th till 13th centuries).

At first, nomads partly assimilated with Chinese. Cities were built with two foci, one Nordic zone with tent and Nordic halls and the other Chinese zone. Two systems on culture, politics, economy and spatial layout coexisted in one city.

Later on, nomads traded and cohabited with Hans, learnt Confucian liturgies, executed Chinese centralized political systems and finally built cities according to Chinese ideals. The assimilation happened and different ethnical groups learnt from each other. I.e. the famous city Xanadu is the hybrid of Chinese chessboard city and Mongolian naturalism ideology. (Twitchett, Franke, & Fair, *The Cambridge History of China: Volume 6, Alien Regimes and Border States, 710-1368*, 1994)

In these cases, the process of assimilation of locals (Chinese) and immigrants (Nomads) happened in every the aspects including culture, politics and the spatial planning.

3.1 The Nordic Tents inside Chinese Imperial Grid

In the later Northern Song dynasty, a strong Nordic cavalries, Khitan conquered northern China and created Liao Dynasty (907-1125). The social system of Khitan is slavery. The emperors created zones and enslaved Chinese to cultivate lands for the troops and build cities. The first built capital of Jin, the Upper Capital, shows a grid planning with harsh combination of Chinese zone and Khitan zone. (Twitchett, Franke, & Fair, *The Cambridge History of China: Volume 6, Alien Regimes and Border States*, 710-1368, 1994)

This city was built from empty ground in Inner Mongolia. It consisted of two parts, the northern Khitan royal palace and the southern secular Chinese city.

Northern Khitan royal city is mix of Chinese city and Khitan tent. It has a rectangular shape with 2km south-north and 2.2km east-west. In the middle north there is the Imperial City that is a 600 by 300 m rectangular. Four east-west and north-south avenues crossed and shaped a '井' grid. The symmetric axis is the vertical avenue connecting the southern gate of Imperial city towards south. The wide horizontal outside the southern gate was used for the annual Big Court Ceremony. The above spatial characters are copy from Chang'An in Tang dynasty. The only difference was the orientation of halls. Khitan liturgy took east as supremacy. Therefore, except the two big courts, all other halls faced eastward. (Steinhardt, 1999)

While in the northwest plenty of un-built blank grounds existed. These lands are left empty for temporary tents when cavalry noble families visited the emperor. (Yang, 2006)

Southern Chinese secular city adjoined directly to the south of royal city. It is 1.4km south-north and 2.2km east-west. There are one south-north and one east-west avenues with Chinese residences alienated alongside. At each corner of street watchtowers were built to surveillance the Chinese. (Steinhardt, 1999)



Caption 3: Plan of Northern Capital of Khitan (Yang, 2006)

Even though Khitan used Chinese grid style, its capital was still a separation of locals and newcomers. The tents are remained for cavalries. Two foci were built, the northern for Khitan and the southern for Chinese. The social system is still a mix of slavery and feudalism. The liturgies, cultures and political systems were not assimilated but remained as Nordic ones.

3.2 The Combination of Mongolian Naturalism and Chinese Imperial Liturgies: Xanadu

Mongolian emperor Kubilai Khan finally conquered the Southern Song, and established a big empire in the whole territory of China. He created a powerful empire based on feudalism. In 1250, he assigned Chinese architect Liu Bing Zhong to design the northern capital, Shang Du, the Xanadu in the book of Marco Polo. This city became a real hybrid of Nordic naturalism and Chinese imperial grid. (Twitchett & Fairbank, The Cambridge History of China: The Ming dynasty, 1368-1644, Part 1, 1988)

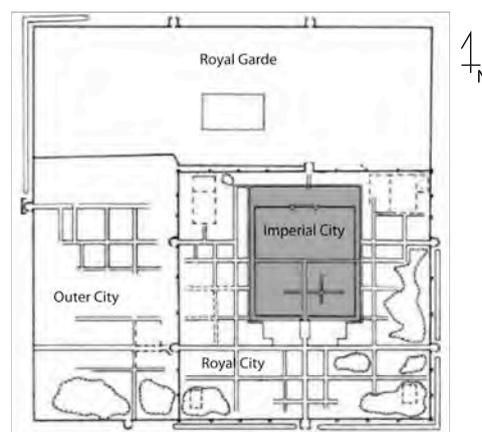
First, Liu created the triple wall system from Bianjing, the capital of Northern Song, with the outer city, royal city and imperial city. The main part is the royal city that contains imperial city. The royal city occupied the major southeast part. The outer city consisted of northern and western parts. The northern part of outer city is the royal garden that linked to the palatial city.

The outer city is a square with 2,200 meters by side. In the southern and western wall there is each gate. A 25 m wide moat surrounded the outer wall. The northern royal garden has no street but gardens with hills. The southern part of outer city contained streets and residential zones. Three east-west avenues parallel in the western part of outer city, like and planned orthogonal chessboard grid as Chang'an from Tang dynasty. The middle avenue connected toward the western gate of inner city.

The royal city is in the southeast, a square with 1,400 meter in side length. There is a central gate in the northern and southern walls and two gates in eastern and western walls. The imperial city is in the northern part of inner city. The symmetric horizontal and vertical avenues are built inside inner city.

The imperial city is a beautiful scenario that contains half garden and half palace. It has groups of halls surrounded by natural elements as hills and ponds. (Steinhardt, 1999)

The assimilation also happened in liturgies. Kubilai Khan is an open-minded emperor who introduced ideas of Confucian, Taoism and Buddhism together into new social liturgies for Yuan dynasty (13th century CE). He followed the Chinese imperial systems, liturgies of courts and conduct traditional Chinese worship ceremonies for sky and ground. And most important, the planning of the city is no longer a separation but an integration for all ethnical groups. No tents, Mongolians, Chinese and other ethnical groups lived together in the outer and royal cities. Xanadu became the standard model for its capital, Da du, which is the foundation of Beijing. (Yang, 2006)



Caption 4: Plan of Shang Du, the Xanadu (Steinhardt, 1999)

The change of Nordic immigrants into Chinese way of living and construction took over 100 years. From Khitan to Mongolian, the process undertook the initial conflicts, slavery and slaughters into trades and finally accepted the liturgies of Chinese, from Confucian to Buddhism. And the eventual assimilation reflected in the creation of grid. The grid represented trend of social changes. From initial thorough exclusion to later integration, this assimilation is clearly shown in Nordic cities.

4. The Powerlessness of Grid Change in Border Cities

In this chapter, we jumped to the border cities in Ming and Qing dynasty (14th till 19th centuries). They are remote from central China therefore special delegations were sent and inhabited in as the surveillance bureau of the city and minor ethnical groups. Normally, the border cities are also the pivotal trading points, the trends of ethnical mix are common as results of economical relationship and correspondent cultural acceptance. Therefore, the forceful divisions of cities from governance may damage the integration of different ethnical groups. (Twitchett & Fairbank, The Cambridge History of China: The Ming dynasty, 1368-1644, Part 1, 1988)

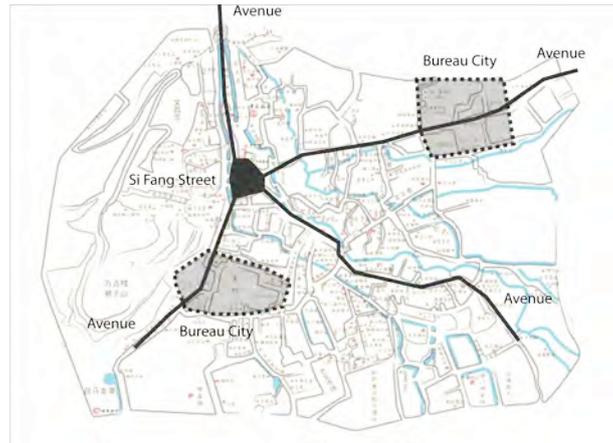
Two cases, City of Li Jiang in southwest linking to south Asia in hinterland and City of Guangzhou (Canton) in southeast as international port are presented. While in these cases, the physical division is powerless compared to the spontaneous willing to communicate between groups. They give us the idea the economical needs and cultural merging are even crucial than the spatial interference.

4.1 The Powerlessness of Political Exclusion and the Prevailing of Spontaneous Secular Foci

Li Jiang Prefecture is in Yunnan Province and served as a trading pivot linking southern China and South-Asia nations. The secular and commercial focus had been Si Fang Street, in the northwest of the city.

While in order to rule the local Naxi minority and other ethnic people, in Ming Dynasty (14th century), a bureau city was built in southwest under a hill for Tu Si, the delegator assigned by central government. This supposed to be a new political focus, separated from the old. Later in Qing dynasty, a new local commander Liu Guan was assigned and new bureau city was constructed in the east. This city became the second political centre. They were walled and separated from secular centres. However, the focus of city never moved to these two isolated cities but stayed in Si Fang Street. The new political centres became leftover peripheries. (Committee of Chronicles of Li Jiang, 2000)

Si Fang Street had been the open market for local and international trades from day to night, Naxi, Han and other ethnical minorities lived closer to the plaza. And the prevailing secular power and hilly topography resulted into a labyrinthine city grid that starts from Si Fang Street and radiate outside in four directions.



Caption 5: Plan of Lijiang (Committee of Chronicles of Li Jiang, 2000)

This case showed the political decision to create exclusion among ethnical groups, if contradictory to the trends of social integration, may fail and the power of trading can boost the spontaneous integration. As well the city grid is more labyrinthine as the result of self-growth.

4.2 The Forceful Exclusion Stopped the Integration and Resulted in the Failure of Civilization

Guangzhou located on the Pearl River. It was called Panyu in Qin and Han dynasties, as the capital of southern provinces till today. In Tang dynasty (7th century), the city was a rectangular with 5 *li* in perimeter with three gates in east, south and west. Till Song dynasty (11th century), it expanded to three conjoined cities: west, middle and east. With increasing residents and international traders along the riverbank, in 1565, the northern cities were combined into one as the bureau and Chinese city. (Committee of Chronicles of Guangzhou, 2000)

In Ming dynasty, Chinese emperors put laws to forbid the international sea trade. Therefore, China closed its doors towards the occidental traders. And in western border, the Ottoman Empire cut the connections from west to east in hinterland. Therefore, the Chinese world cannot communicate with western cultures anymore. (Peterson, 2002)

Later in 16th century, Ming dynasty emperor allowed foreigners to build factories and ports southwest outside the wall of Guangzhou. Guangzhou became a port contained limited zones for international trade. The southern linear city was made as for trading and buffering zones between foreign traders who inhabited outside the wall and local traders. A small island was used as an enclave of western settlements, named *thirteen factories*.

The island was planned by British and divided into long rows. Each row was assigned to each European country for their warehouse, embassies and factories. Compared to Guangzhou, western grids with straight parallel lines was very efficient considering the land division among countries and functional considering the process from transporting, organizing, storing, producing and selling. (Skinner, 1977)

Therefore, Guangzhou had three foci separated, one political Chinese bureau city, one for buffering zone of trade and one enclave for international settlers. According to the imperial law, different inhabitants cannot communicate among each other. Chinese can work in

foreign enclave but the foreigners cannot enter Chinese city. It is a way to forbid the direct communication from newcomers, separate the ethnical groups. (Peterson, 2002)



Caption 6: Plan of Canton (Johnston, 1910)

This divided city is just a miniature on how China isolated itself from the world in 17th -19th century. Chinese emperors stopped the free trading, direct cultural contacts, put strict laws against foreign settlers and built cities into different enclaves. Because of this Sea Block, China lost opportunities to understand and take advantage of the scientific advancements from west, and finally got shocked and destroyed in Anglo-Sino war in 19th century. It has been the lessons for eastern Asians that 'to block the integration' is the bad option from bloody lessons learnt in history.

5. Chinatown in Milan

In this chapter, we come to the contemporary international *Frontier*, to examine the new Chinese immigrants in Milan, Italy. However, the Chinatown in Milan is different from those in other world. The tolerant attitude of Italian government and residents has helped to integrate the Chinese immigrants, and the Chinatown in Via Paolo Sarpi had become part of Milan attractive point.

5.1 The Integration of Chinese Immigrants and Renovation of Via Paolo Sarpi

Chinatown is a quarter of Zone 1 in Milan with the high concentration of Chinese communities and businesses. The Chinese presence began around 1920 with a massive immigration from the Zhejiang Province.

Despite its name, it is different from the traditional Chinatown known in the world. The peculiarity of the neighbourhood is the prevalence of Italian residents for the 95%, compared to over 500 Chinese wholesale businesses that serve peddlers from all over Italy, thus forming a particular area that, according to some, it would be wrong define 'Chinatown' but a Chinese Trading Street inside Italian residential quarter. (Farina, 1997)

At the end of 2008 the municipality made via Paolo Sarpi area ZTL (limited traffic zone), while in 2011 became a pedestrian street, linking from Porta Volta towards Corso Sempione. The Milan municipalities hope these interventions can favour the reduction of wholesale trade activities on street and make the neighbourhood toward effective multi-ethnicity, enhancing both the history and the traditions. (Comune di Milano, 2012)

Of course traditional events occur during Chinese New Year. In 2011, a pair of dragon parade from the main street of the neighbourhood (via Paolo Sarpi) processed from piazza Gramsci at the western end of the neighbourhood, preceded by dances and drum rollers, and attracts a crowd of onlookers including tourists, locals and other immigrants from all parts of Milan.

In recent years, the municipality put two points of Bikemi, the economic city bike rent project, in both ends of Via Paolo Sarpi, to incorporate the neighbourhood in the public service system of Milan. And for the reviews of the newest Milan tourist guides, Chinatown is growing a stronger interest linked above all to the possibility of a different kind of shopping. (Bikemi by Atm, 2008)



Caption 8: The new design of Via Paolo Sarpi, with Bikemi and Festival (Associazione Liberi Esercenti Sarpi, 2009)

In this case, the Chinese community in Milan had grown as a commercial point instead of an ethnical residential area. After 2000, cargos and noise created by Chinese wholesalers aroused the complaints from Italian residents. The initial official sanctions over Chinese traders finally aroused the big protest in 2007. The municipality changed the attitude from 2008, refurbished Via Paolo Sarpi, incorporated it into centric pedestrian system and linked it with Bikemi, etc.

6. Conclusion and Discussion

In the first part, the initial spatial and social exclusion in ancient kingdom based on clans was presented. It showed the inevitable reaction towards the aliens from the beginning of civilization. The second part about the Nordic-Chinese cities show how the nomads learnt from Chinese way on culture, politics and the spatial layout of cities. The two examples in third part are arbitrary divisions of city zone based on ethnical groups are listed. The Li Jiang case did not succeed due to the strong magnet of commercial focus while the Guangzhou

case presented the thorough ethnical, economical and political cut among different groups, which is a miniature representing the failing self-block police of later Chinese empire. The final part the contemporary Chinese immigrant case in Milan gives us a positive example on the mutual acceptance between Italian government, Italian residents and Chinese newcomers in the cultural acceptance and the commercial mutual benefits.

These cases together constructed a general process of integration of ethnical groups into locals: At first, the conflicts happened between locals and newcomers, normally city is designed to facilitate separation and politics is made to limit contact; the economical actions among ethnical groups gradually result into cultural acceptance and mutual communications and eventually the new politics, rules and the space would be changed in favour of better integration of locals and immigrants.

In this process, spatial planning plays as the physical interference as the reflection of the decision from rulers upon the social orders: at first, space is divided to control new immigrants, normally shaped a ghetto spontaneously or politically to avoid direct conflicts among groups. When economic happened between locals and new comers as well cultures mutually accepted, the physical boundaries would break up and facilitate the communication of different communities.

However, the above two spatial tools cannot be used at any time. It depends on the coherence between spatial planning and trends of social integrations; it is unwise to merge spaces of diverse ethnical groups when immigrants just arrived and in reverse it is unsuitable to forcefully separate the mutual accepted groups to stop their future communications. To simplify, spatial change should be in favour of the trends of social changes in order to enhance and stabilize the mutual effects of different ethnical groups.

The four parts can help to understand the process of social conflicts between different ethnical groups. The key of integration is first economy, second culture, third physical merging by grid to make stable mutual coexistence. In this process, the usage of grid is delicate, listening to and observing the will of people, and change the grid by political force. Enhance and facilitate the merging and coexistence. Economy only is not enough, culture only is also in vain.

Therefore, for the political makers, it is necessary to create cultural events to improve economy and culture understanding. For planners, is to ready for the plan or urban renovation project that can increase the accessibility and centrality of the immigrant zone. And give advice for politicians about when and how to start the change of grid. For locals and immigrants, wait and open mind to the new neighbours.

References:

Associazione Liberi Esercenti Sarpi. (2009). *viapaolosarpi*. Retrieved from <http://www.viapaolosarpi.com>: <http://www.viapaolosarpi.com>

Bikemi by Atm. (2008). *Stations map Bikemi*. Retrieved from Bikemi: <http://www.bikemi.com/localizaciones/localizaciones.php?TU5fTE9DQUxJWkFDSU9ORVM%3D&Mw%3D%3D>

Cologna, D. (2002). *La Cina sotto casa: convivenza e conflitti tra cinesi e italiani in due quartieri di Milano*. Franco Angeli.

Comune di Milano. (2012, September 28). *Zone a traffico limitato e corsie preferenziali*. Retrieved June 10, 2013, from Comune di Milano: <http://www.comune.milano.it/>

Committee of Chronicles of Guangzhou. (2000). *Chronicles of Guangzhou*. Guangzhou: Guangzhou Publisher.

Committee of Chronicles of Li Jiang. (2000). *Chronicles of Li Jiang*. Yunnan Ethnical Publisher.

Farina, P. (1997). *Cina a Milano: famiglie, ambienti, e lavori della popolazione cinese a Milano*. (A. i. metropolitani, Ed.) Milano: Abitare Segesta Cataloghi.

Johnston, W. &. Plan of the city of Canton. *The International Relations of the Chinese Empire. Volume 1. p. 118*. Hosea Ballou Morse.

Kwang , C. C. (1986). *The Archaeology of Ancient China*. New Haven: Yale University Press.

La Repubblica. (2007, Aprile 12). *Milano, rivolta a Chinatown Scontri, feriti e auto distrutte*. Retrieved June 10, 2013, from La Repubblica: <http://www.repubblica.it/2007/04/sezioni/cronaca/milano-rivolta-cinesi/milano-rivolta-cinesi/milano-rivolta-cinesi.html>

Loewe, M., & Shaughnessy, E. (Eds.). (1999). *The Cambridge History of Ancient China: From the Origins of Civilization to 221 BC*. Cambridge: Cambridge University Press.

Peterson, W. J. (2002). *The Cambridge History of China. Vol. 9, Part 1: The Ch'ing Empire to 1800*. Cambridge: Cambridge University Press.

Skinner, G. W. (Ed.). (1977). *The City in Late Imperial China*. Stanford University Press.

Steinhardt, N. S. (1999). *Chinese Imperial City Planning*. Hawaii: University of Hawaii Press.

Twitchett, D. C., & Fairbank , K. J. (Eds.). (1988). *The Cambridge History of China: The Ming dynasty, 1368-1644, Part 1*. Cambridge University Press.

Twitchett, D. C., Franke, H., & Fair, K. J. (Eds.). (1994). *The Cambridge History of China: Volume 6, Alien Regimes and Border States, 710-1368*. Cambridge: Cambridge University Press.

Xu, H. (2000). *Pre-Qin City Archaeology*. Beijing: Yan Shan Publisher.

Yang, K. (2006). *The History on the Constitution of Chinese Ancient Imperial Cities*. Shanghai People's Publisher.

Multi-directional Flows of People In One City: The Case of Istanbul

Burcin YAZGI, ITU, Turkey

1. Introduction

Istanbul as the largest economic and cultural centre of Turkey is an urban lab for varying flows of people. Due to its cosmopolitan structure, the city of Istanbul is a hotspot for analyzing the spatial, social, cultural, economic and political challenges occurring in parallel to the multi-dimensional flows of people. As a city of conflicts and composites, the dynamics within the city make it possible to have different analytical approaches to the city. For a better understanding of the city it is important to be aware of the heterogeneous structure of varying flows of people and their choice of space.

The relation of people and place was a hot topic as it is today and several studies have been done to understand the interaction with various different aspects (Tuan, 1977; Lefebvre, 1991; Massey, 1994; Certeau, 2002; Cresswell, 2004; Simone, 2004). Their reflections into daily life, physically and politically, were also studied (Byrne, 2001; Crang, 2002; Amin and Thrift, 2002; Purcell, 2002; Simone, 2004).

While going through these concepts, there is a third dimension, space, to be considered and a fourth dimension that is the flows of people. Changing experiences and needs of people based on their different backgrounds, can be effective on differentiation of their preferences. The different perspectives of each individual will play a different role in the choice of place and act to move from one to another. The scale of the type of the flow can differ but in this study the flows investigated are the ones for relocation purposes.

There are many more things to understand by exploring the people living in particular places; in the way Thrift (1997) mentions places are the stages of intensity. There is more we can add with a proper approach, keeping in mind that, unique and not similar places with disparate residents adds to the richness of the city (Beyazli and Aydemir, 2008). These places become the spaces for different people from different educational, cultural and socio-economic backgrounds to show their own life practices. This is one of the motivations for the flows. Since Istanbul is a vast dynamic city, it is not difficult to find many locations to talk about the various flow characteristics. Even though it is easy to explore different categories of flow in Istanbul, in order to have a better evaluation of different aspects of flows of people in Istanbul, some spatial representatives/places are selected.

Therefore, two opposing neighborhoods are chosen as sample areas to discuss the changing physical, social, cultural, economic and political patterns in Istanbul. First, Tarlabasi, an old central neighborhood on the agenda of the city/country for several different reasons, and second, Bahcesehir, a new award winning satellite neighborhood.

The forms and properties of the flows of people in these sample areas will be discussed with a qualitative perspective. While trying to understand the dynamics with a comprehensive approach within the concepts of ghost space, lost space, cost space and host spaces of the city, the research is also trying to find the answer for the questions the following questions;

What are the real needs in a dynamic city? What is the interaction between these flows if any at all?

Through the exploration of these relations and the pattern of the flows in the city, it is recognizable that new spatial cultures are added to the city cycle everyday. As a result of these, the terms and the concepts are changing in the city agenda and the city is becoming more complicated everyday. With this study - sensing the city of Istanbul with respect to the contradictions, similarities and complexness of the flows of people - the main purpose to contribute to our understanding of 'the city' or what forms 'the city'.

The organization of the study is as follows. After talking about the background of the flows of people, based on the selected sample areas in Istanbul, the topic will be discussed in depth. These sections will be followed by concluding remarks.

2. Background of Flows

After the basic relation of people, space and place there is the fourth dimension which is flows, the main focus of this study. Istanbul is the largest city in Turkey with a population of 12,573,836 (TUIK, 2007), 2042 p/km population density, living in 39 districts; 14 with an average population of 300.000. As a result, it is not difficult to talk about the spaces between places and/or places between spaces in the city itself. Moreover, it is easy to find various examples of flows in every category (physical, economical, social and cultural), in every stage and scale. Since, places are the sites that have various identities and histories and the processes as in the alternative approach of Massey (1994), it is possible to talk about the potential flows which are based on these places.

2.1 *Tarlabasi through the years*

In Tarlabasi, the residential settlement goes back to the 1850s when the country was in the state of re-form. Implementation of capitalism was the popular topic on the agenda and with a target of economic development. Also cultural and social transformations were ongoing in the country in those days. Physical developments were in the form of new constructions (residential areas, infrastructure, transportation, etc.). Partial plans were the popular solution to the rapid changes. After 1910s until the establishment of Republic, the country was in the top-down modernization process. Population was increasing, new reforms were being applied and the quality of life was changing. Tarlabasi at that period was more trying to gain some aesthetic values. The environment in the neighborhood was good and healthy. Mostly mid-income non-muslim families were living in and the quality of life was high.

After the establishment of Turkish Republic, until the 1950s, the country was facing a transformation into a nation-state. Modernity was the popular term. There were physical changes in the cities as well. Cities were becoming the places of modernity and new perspectives in urban planning were being discussed. Parallel to these developments, it was possible to talk about the differentiation in hierarchy. Tarlabasi in this period was facing an ownership change started by the social structure change. While the non-muslim inhabitants were leaving the neighborhood, new migrants were moving in.

As a result of this in the early 1940s, Tarlabasi acted as a lost space. After this short term - since its habitants (minority groups) moved out and new groups started to live in this neighborhood - it was again in the role of a host space. The first users at that stage were the rural migrants after industrialization, followed by the Kurds escaping from the southeastern part of the country and nowadays gypsies, foreign immigrants (African and Afghan) and transsexuals are the residents of this place (Saybasili, 2007; Candan and Kolluoglu, 2008; Islam, 2009).

The period between 1950s and 1980s was a period that the populist tendencies were active in the state. In economical aspects the investment was mostly in service and industry sectors and in new housing sites. Job opportunities in the big cities were increasing and so too was the population. Migration was the big social issue since it was the main reason of the emergence of slums in big cities, especially in Istanbul. Tarlabasi was struggling with the main road project going through the neighborhood, which separated the area from the lively parts of the city like Istiklal Street and its surroundings. By 1960s the number of the unoccupied buildings were quite high in Tarlabasi area.

After 1980s the country was in the direction of the neo-liberalism. Globalization, post-modernism and transformation were the popular concepts of this era. The important term was 'big' or 'more'. Big organizations, large capital investment, mass housing projects, huge conflicts and big privileges; more illegal settlements, more gentrification processes, more reconstructions are some of the subjects of this period. In Tarlabasi every concept found its reflection in different ways during this period. The proposed road was constructed by demolishing some of the buildings belonging this area, furthering the disconnection of Beyoglu and Tarlabasi. The spatial, social and economic structures in the neighborhood collapsed, triggering a cycle of new collapses. In 1993 Tarlabasi was an 'urban conservation area'. By the 2000s the neighborhood was more than a stepping-stone because half of the inhabitants were home owners. After 2000s with the 'big and more' trend Tarlabasi was the target for the urban transformation projects. Outflows of ethnic groups and inflows of newcomers led to general unstableness and the negative public perception following these resulted in spatial discrimination.

2.2 Bahcesehir

Bahcesehir, established as a satellite city, has a history of only 20 years. The first registered population in this area was 12915 in the year 1997 (Unsal, 2007). The fear of earthquakes, added to the fear of living in the city centre after becoming a globalized and metropolitan city, accelerated the construction of these and similar types of residential settlements, especially in the peripheries of the city. Security being the main promotional element in these housing complexes caused them to be successful in attracting large groups of people. The Bahcesehir project won awards from the United Nations Habitat Conference II in 1996, Canada for new urbanism in 1997 and The American Institute of Architects in 2000.

As Aksoy and Robins mentioned (1997) "their modern space was a clean and orderly environment, quiet and traffic-free, and with the clean air and unpolluted environment that an almost rural environment (located twenty kilometers from the centre of the city) could promise. It could accommodate a purified modern lifestyle, in retreat from everything that Istanbul had become as a consequence of its actual modernization".

Following the modernization and neo-liberal trends, this new modern satellite town was forming an edge city. Nowadays the population is around 50.000 since some other small towns joined to this neighborhood. The demographic structure of Bahcesehir is quite different to Tarlabasi. The inoccupation rate is 1.1%, the rate of having more than one car in the household is 87%, the house ownership rate is 68% and the rate of the inhabitants who have a higher degree diploma is 45%.

After all information given above, it is possible to talk about the different processes that these two different neighborhoods experienced based on the state's agenda and the popular concepts and trends of the era which can be followed in Table 1.

Table 1 – Summary of the multi-dimensional structure

State Agenda	Politic	Physical	Social	Economic	Cultural
1850-1910	<i>Re-form</i>	<i>New constructions New housing areas</i>	<i>Formation of the classes</i>	<i>Target: development</i>	<i>Transformation of the traditions</i>
1910-1923	<i>Top-down modernization</i>	<i>Expansion</i>	<i>Change of quality of life</i>	<i>Improvement</i>	<i>Population growth-multi cultural</i>
1923-1950	<i>Transformation into a nation-state</i>	<i>Reshaping the cities</i>	<i>Migration of non-muslims</i>	<i>Small scale industries-Anatolian cities</i>	<i>Differentiation in hierarchy</i>
1950-1980	<i>Populist tendencies</i>	<i>Emergence of slums</i>	<i>Disintegration of rural class</i>	<i>Investments service-industry sector</i>	<i>Increasing population-hard to be part of city</i>
1980-2013	<i>Neo-liberal direction</i>	<i>Mass housing projects Illegal settlements</i>	<i>Gentrification Big privileges</i>	<i>From industry to information society Large capital investments</i>	<i>Conflicts</i>
Tarlabasi Agenda	Trends-concepts	Physical	Social	Economic	Cultural
1850-1910	<i>Modernism</i>	<i>Good environment</i>	<i>High quality of life</i>	<i>Mid-income families</i>	<i>Non-muslims</i>
1910-1923	<i>Aesthetic Values</i>				
1923-1950	<i>Transformation</i>	<i>Suggestions for the new road</i>	<i>Social structure change</i>	<i>New property tax</i>	<i>Ownership change</i>
1950-1980	<i>Restoration-renovation</i>	<i>Unoccupied buildings</i>	<i>Outflows-inflows</i>	<i>New job opportunities</i>	<i>Rural migrants</i>
1980-2013	<i>Collapse</i>	<i>Spatially collapse</i>	<i>Social collapse</i>	<i>Marginal sector</i>	<i>Cultural collapse</i>
Bahcesehir Agenda	Trends-concepts	Physical	Social	Economic	Cultural
1980-2013	<i>Satellite city - Comfort</i>	<i>New housing complexes</i>	<i>Integration in the borders</i>	<i>Mid-high income</i>	<i>Urban migrants</i>

3. Flows of People in Istanbul: Discussion

Istanbul, as the largest economic and cultural centre of Turkey, is a city of dualities, refractions and polarizations (Keyder, 1999). The history and the users of the city and the preferences of the users change day by day. In addition, important locational points of the city change. New trends, new policies, new technological developments and followed by new types of flows add to the urban cycle. Economical behaviors and socio-cultural values change and as a result of all these, the terms taking place in the urban system change.

We started to talk about the place, space, time, people, flow, non-place, placeless, sense of place, urban space, extra-urban space, host space, ghost space, lost space. The relations, connections, interactions between all these terms gain importance.

With the background knowledge of the explored neighborhoods, this section of the study will focus on the flows happening in these areas (Figure 1). Tarlabasi is a transformed place. In the early settlement years it was one of the desirable locations for people. It was a satisfying host space for the people who are coming from other parts of the city as well as the other countries. After some time, the neighborhood turned into a lost space with the high number of unoccupied buildings and outflows of the non-muslim groups. In these transition years it again gained the host space title but this time from the inflows of people who were not familiar with the city life who prefer to live for a short while, thinking that they would be able to move somewhere better in the city in the later periods as they get used to the system. In the end, Tarlabasi turned into a “compulsory space for those who are excluded from the society” (Saybasili, 2007).

Although Tarlabasi is in a central location it is more like an isolated urban space compared to Bahcesehir, which is an ‘out of city’ settlement. Some projects done in mid 20th century, constructing a new road by destroying the buildings in this area, caused Tarlabasi to be physically separated from the rest of the city. This was not the only obstacle, after this physical edge/border, people/non-residents of this area imputed a socio-economic and socio-cultural border between Tarlabasi and its neighborhood. When you go beyond these borders, what you see will be no more than people trying to “squeeze their bodies into a tiny space in the city, a certain location, a certain geography in the city” (Saybasili, 2007).

In the Tarlabasi area, it is the case that people settle here coming from the other parts of the city, other cities and countries and after some time, these flows can turn into outflows. The other interesting side of these flows are those horizontal ones within the same neighborhood (Figure 1).

While Tarlabasi is struggling with these issues, Bahcesehir is being the host space in an optional way for those who want to form their own new society. In other words, while people living in the Tarlabasi are fighting against not being excluded, the people in Bahcesehir are trying to exclude ‘the others’ in these high cost places.

The situation of course, is a little bit different in Bahcesehir where there are not so many limiting factors. The only type of need referred to this situation can be the need for some differentiation/change (Ozgur, 2006). It is not possible to speak about the infrastructural problems or to notice water and electricity cuts in this rich urban space. The most important problem in Bahcesehir, which has a different built environment, family composition and urban pattern, will be the distance between car park and the apartment. Despite this, the flow types are limited. Most of the inhabitants are coming from other parts of the city. The inhabitants coming from the other cities and countries are relatively less compared to Tarlabasi.

Even though Bahcesehir does not currently have serious problems, the things recognized at first will be different than the things perceived later on. It can easily be described as “non-place; that place is lacking history or do not have distinguishable markers of identity and perhaps most importantly place that can be replicated endlessly in different spaces” (Candan and Kolluoglu, 2008). This can easily make Bahcesehir turn into a ghost space as the same ending Tarlabasi faces.

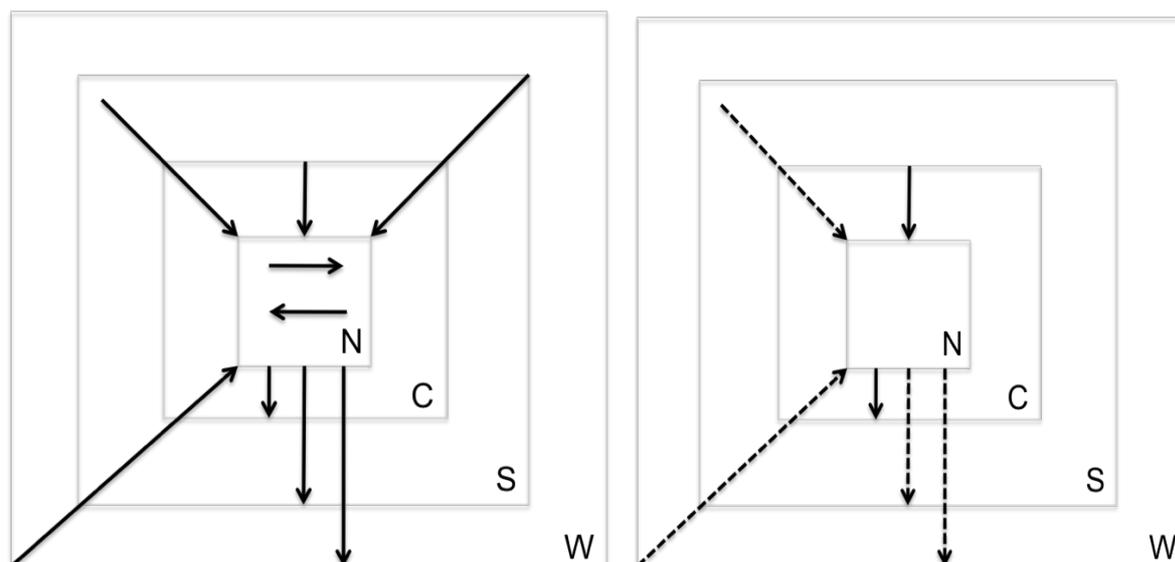


Figure 1 – Multi-directional flows of people in Tarlabasi and Bahcesehir
(N-neighborhood C-city S-state W-world)

According to Byrne (2001) “urban spaces are evolving and changing complex systems”. This cycle will never stop and will go on with all the new flows added to urban system not as an outcome of the city itself but also of the world as well. As the scale or type of the flows change, the cycle of the multi-directional flow will gain a different dimension in the city. The content of the flow which is based on the content of the place will turn into a new spatial concept in the experienced urban life.

The lesson here is that separating into two categories as good or bad, acceptable or unacceptable, perfect or defective and even tolerable or intolerable is not the answer or the solution for the city’s needs.

4. Conclusion

By taking two different examples of urban spaces of Istanbul into account, we can easily agree on the multidirectional flows of people based on the need of relocation and the varying procedures during the movements.

With the city’s changing complicated structure, a new and rich urban space and an old and poor one, which seem to have remarkable differences can actually be considered not different than each other. In the city centre or in the outskirts of the city, in the urban or extra-urban space, they are trying to cover their necessities, permanently or temporarily. The question to be asked is; is it what the city needs?

Each place has its own characteristics and dynamics based on the people, place and flow interactions and we should be able to use the advantages of this mosaic pattern of the urban space. As Cresswell (2004) stated “writing about and researching place involves a multi-faceted understanding of the coming together of physical world (both natural and cultural), the processes of meaning production and the practices of power that mark relations between social groups”.

Historical and social dynamics alter the place-time-flow relations. If we try to understand today’s cities, which include the complexities and contradictions, with this aspect we can easily comprehend the conflictions forming the monolithic. If we can manage to use the

combination of these differentiations then we can discuss about the different level of spaces and flows in the same city, acting as part of the city dynamism.

According to Amin and Thrift (2002) city is “an amalgam of often disjointed processes and social heterogeneity, a place of near and far connections, a concatenation of rhythms; always edging in new directions”. A more heterogeneous approach to city would take into account the multiple perspectives that make up ‘the city’. A singular approach to the city fails to account for urban complexity. In Hansen and Vekaaik (2009) perspective, “The urban is also a way of being in the world and must be understood as a dense and complex cultural repertoire of imagination, fear and desire”.

Following Massey’s (1994) argument, places are not static and they have their own processes. According to Byrne (2001) “urban spaces are evolving and changing complex systems”. This cycle never will stop and will go on with all the new flows added to urban system not as an outcome of the city itself but also of the world as well.

With new flows, it is not easy to say what is right, what is good and what the necessity is. When you try to understand the condition of these different urban spaces including different groups of people existing in the same city border at the same time, you can only have new question marks in your mind. Which one is for the real needs, which is the needed one, which of them is the valid solution? As we all agree, getting an answer for these questions will not be easy as place, space and people are all connected and they affect each other in the form of flows; also the answers we get will be subjective and relative as the type of flow change.

References:

- Aksoy, A. and Robins, K. (1997) "Modernism and the millennium", *City: analysis of urban trends, culture, theory, policy, action*, 2, 8, pp. 21-36.
- Amin, A. and Thrift, N. (2002) *Cities: reimagining the urban*, Polity, Cambridge.
- Bahcesehir Newspaper, (2013), <http://www.bahcesehirgazetesi.com>, 20.07.2013.
- Beyazli D.S. and Aydemir, S. (2008) "Kentlilik bilinci ve mekan: Trabzon kenti ornegi", *Planlama, TMMOB Sehir Plancilari Odasi*.
- Byrne, D. (2001) *Understanding the urban*, Palgrave, Basingstoke.
- Candan, A.B. and Kolluoglu, B. (2008) "Emerging spaces of neoliberalism: a gated town and a public housing project in Istanbul", *New perspectives on Turkey*, 39, pp. 5-46.
- Certeau, M.D. (2002) *The practice of everyday life*, University of California Press, Berkeley.
- Crang, M. (2002) "Between places, hubs, flows and networks", *Environment and Planning A*, 34, pp. 569-574.
- Cresswell, T. (2004) *Place: a short introduction*, Blackwell Publications, Malden MA.
- Hansen, T.M. and Verkaik, O. (2009) "Introduction—Urban Charisma, on everyday mythologies in the city", *Critique of Anthropology*, 29, 1, pp. 5-26.
- Islam, T. (2009) "Tarlabasi", *Istanbul city of intersections-urban age conference newspaper*.
- Keyder, Ç. (1999) *Istanbul küresel ile yerel arasında*, Metis Yayınları, Istanbul.
- Lefebvre, H. (1991) *The production of space*, Blackwell Publications, USA.
- Massey, D. (1994) *Space, place and gender*, University of Minnesota Press, Minneapolis.
- Ozgur, E.F. (2006) "Sosyal ve mekansal ayrisma cercevesinde yeni konutlasma egilimleri: kapali siteler, Istanbul, Cekmekoy ornegi", *Planlama, TMMOB Sehir Plancilari Odasi*.
- Purcell, M. (2002) "Excavating Lefebvre: the right to the city and its urban politics of the inhabitant", *GeoJournal*, 58, pp. 98-108.
- Saybasili, N. (2007) *Tarlabasi: 'Another World' in the city, de-regulation posts*.
<http://www.de-regulation.org/files/derege/>
- Simone, A. (2004) "People as infrastructure: intersecting fragments in Johannesburg", *Public Culture*, 16, 3, pp. 407-429.
- Thrift, N. (1997) *The still point: resistance, expressiveness embodiment and dance*, *Geographies of Resistance*, Routledge, London.
- Tuan, Y.F. (1977) *Space and place: the perspective of experience*, University of Minnesota Press, Minneapolis.
- Turkish Statistical Institute, TUIK (2013) *Turkey City Population Census*, 15.07.2013.
- Unsal, F. (2007) *The evaluation of project typologies in Istanbul: from conspiring dialogues to inspiring dialogues*, 43rd ISoCARP Congress, Antwerp, Netherlands.

From Rate Growth to Quality Improvement: Promoting Policy System for New-Urbanization in China

(From Rate Growth to Quality Improvement: Promoting Policy System for New-Urbanization in China)

Cheng YU, Huazhong University of Science and Technology, Wuhan, China

Jinfu CHEN, Huazhong University of Science and Technology, Wuhan, China

Xi YANG, HSBC China Beijing Branch, Beijing, China

1. Introduction

After reform and opening-up in 1978, China's urbanization developed rapidly. Although the rate of urbanization varies in different regions, the average rate reached 51.3% (2011, National Development and Reform Commission). After the financial crisis in 2008, Chinese Government recognized that urbanization could drive domestic demand (Fang, 2010), and promote China's economy development status. Therefore the Chinese Government focused on urbanization development increasingly and widely.

However, fast development of society and economy, during the past 30 years, forced the urbanization of China to face depletion of environmental resources, unequal income distribution, shortage of welfare and other issues. Meanwhile, both Central China's emerging strategy and the strategy of Resource-conserving and Environment-friendly Society lead China's urbanization to a new development direction. New urbanization, with a lot of discussions (Qiu, 2010; Cao, 2001; Wen, 2000; Zhou, 2006; Yang, 2012; Song, 2006; Zhang, 2009), simply is more concerned about the quality of urbanization, including environmental quality, living standards of immigrants, as well as the level of industrial development.

Different with developed countries, urbanization in China is promoted by local government (Qiu, 2010). In developed countries, process of urbanization is bottom-up development and synchronized with the industrialization. However, in China, policies are the most important influencing factors on urbanization. Therefore, related policy reforms could help to resolve the contradictions in the process of urbanization development. Nevertheless, new urbanization might promote reform of urban comprehensive competitiveness and coordination of regional development models, so as to realize the harmonious development of social economy and resources environment.

2. Literature Review

2.1 Research on China's Urbanization

In China, urbanization has a large number of research foundations. On China's authoritative academic research sites, CNKI, keyword 'urbanization' could be found 79,128 related literatures, and these literatures can be roughly divided into two categories.

One is the research on emerging issues of urbanization. Cao (2001) argues that reform of traditional Chinese household registration management system has to be conducted due to it has already constrained the economic and social development severely. Wen (2000) believes that the highly capital intensive industrial, urban and rural areas "isolation" policy, as well as the single national investment of city-building approach has hampered China's urban development. Zhou (2006) indicated that Chinese scientific statistical standards brought out the recent abnormal growth of urbanization. Moreover, he also believed that China's

urbanization should avoid "excessive urbanization" the development issues. Yang (2012) indicated that ecological and environmental problems may become a major bottleneck to restrict the development of China's economy, and it will also become a turning point during fast development of urbanization. Song (2006) analyses the relationship between urbanization and cultivated land in China, he believes that China's urbanization led to sharp decline in the number of cultivated land. In addition, he considered incorrect relationship between urbanization and cultivated land would trigger catastrophic consequences.

Another type of literature is a study on how to promote the development of urbanization. Zhang (2009) analyzed the relationship between demographic structure and socio-economic development, and demonstrated China's "unlimited supplies of rural surplus labor" is undergoing transformation. Thus urbanization rate level of China's overall growth will be slowed, and this moderation period provided the time opportunities for urbanization quality improvement. Sun (2005) pointed out that the different nature of urbanization between China and Western countries. Furthermore, China's urbanization must be combined with its own historical development and present situation to draw up an appropriate policy. Gu (2009) analyzes characteristics of urbanization in China and noted that the key of China's urbanization is the resettlement of migrants. Moreover, governments should protect the requirements migrants, thus allowing it to stabilize at urban living and improve lifestyle changes.

2.2 Research on New-Urbanization

In fact, new urbanization is the improvement to the old notion and the content still contains the land, population, industry and other aspects of transformation from rural to urban. Hu (2005) thought that it should be consistent with China's current national conditions, but also distinct from the traditional town concept and the crucial point is to improve the level and quality of development of urbanization in China. Peng (2010) explained in the paper that the new urbanization should contain four ideas: intensive and ecological mode, multi-functions of cities and towns, rational urban system, integration of urban and rural development. Qiu (2010) shared the view that, in China and Western countries, there is a clear difference in urbanization development. Moreover, new urbanization is various kind of issues on energy, labour, mobility, historical and cultural aspects. Fang (2010) shows that the urbanization Rate, in China's urbanization, should be synchronized with the quality to enhance the whole development process. Wu (2009) indicated that lack of market economy affected the healthy and orderly development of China's new urbanization, so the Government will need to participate effectively in the development of urbanization in China with limited intervention. Mei (2011), after analysing China's pension insurance and health insurance systems, considered that unify urban and rural social safeguard standards and strengthening social security for rural migrants could promote the transition from traditional urbanization to new notion. Qiu (2012) proved that the relationship is close between China's economic-social development and urbanization, and system security is essential to new concept.

From the related literature, consensus could be found in several ways: 1) urbanization in China had to face issues such as environment, resources, social equity; 2) urbanization in China and other countries have different realities and various development methods; 3) policies on urbanization development impact is huge because of China's highly centralized political system. However, previous studies only focused on an individual policy instead of analyzing of comprehensive policies for China's urbanization.

3. Methodology

3.1 Case Study Selection

In this paper, the study case will analyze the current China's urbanization situation based on a representative sample of Hubei province. Firstly, in China, Hubei province has the right to

test policy reform, because it is the central region to implement "rising of central China" and "construction of two-oriented society" strategy. Therefore, in promoting the development of urbanization, Hubei province has the certain policy advantages compared with other provinces in China. Secondly, geographically, the level of urbanization in Hubei Province is average level, as Hubei is located in central China and its levels of economic development is between China's developed areas in Southeast and the backward areas in Northwest. Finally, in Hubei Province's urbanization process, there are a large number of semi-urban people. Thoroughly, these people work in non-agricultural trades in cities and they are not as a citizen into the urban life of the city, because these people still own farmland in their hometown as the China's population management system. Overall, this phenomenon is a typical feature of current urbanization in China, and it is also the key to understand China's current urbanization.

3.2 Data Survey

In the preparation of studies, we examined the 13 cities in Hubei Province, 28 counties and 57 towns. * These samples cover the whole levels of large, medium and small cities in Hubei province.

During investigation in these cities, relevant statistics have been collected, including the number of the population, economic development data, cultivated land, infrastructure investment, as well as the number of migrant workers, and so on. This information could be helpful to understand the different level and a different location on the carrying capacity of the urbanization of the city and the ability to attract the migrants from rural to city area.

3.3 Interviews and Questionnaire Survey

If the rationality associated with urbanization policies and difficulties in policy implementation were to be learned, relevant department director would have to be interviewed, including urban construction sector, population management, industry sector, and so on. On the other hand, questionnaires in rural areas could be useful to understand the real situation of agricultural production and farmers' real ideas of migrating to cities.

4. Findings-Main Problems in Urbanization

In Hubei Province's history, level of urbanization has grown rapidly through a series of policies and development strategies. Through interviews and statistical data, there are a series of problems of urbanization in Hubei province. More specifically, key policy factors, raising these issues, are including population management policy, land management policy, and administrative policy dimensions.

4.1 Population Administration Policy

In 2003, Hubei Province has promulgated the views on the deepening the reform of the household registration management system to provide that "in province-wide abolition of agricultural household register, the nature of non-agricultural household register,referred to as ' residents in Hubei household register 'collectively. Public security organs could manage household and migration registration uniformly in accordance with the relevant provisions ", " basic requirements for household register access is lawful permanent residence and relatively stable sources of professional or legal life ", " for farmers entering the town to settled in, employment, social security, housing, schooling, joined the army and citizens alike. " However, due to the province's reform progress is uneven and

relevant economic-related policy reforms does not fit, the household registration system in Hubei province have been unable to efficiently boost.

Lack of appropriate social security system is a major factor to result in urbanization reform cannot be made effectively. During the process of implementation, lack of financial support has delayed the weakening process of dual population management reform. In fact, reform of household registration system has to brought out public service requirements increase. However, it is difficult to provide all migrant farmers a full range of social security based on the financial situation of most towns in Hubei Province. Nevertheless, in a certain sense, equalization agricultural land could be the substitution for social security operating system missing. Therefore, the capability of providing good public services and protection to attract the farmer migrants would affect the rural population management system reform achievement, not the problem of avoiding releasing the household registration system in Hubei province. Specifically, industrial underdevelopment, lack of industrial development ability of small towns, a large number of unemployment and limited tax revenue become the substantial reasons of reform. Moreover, The current financial and taxation systems, no provision of financial resources for local governments, exist crucial problems on perfecting the social security system and providing the necessary financial support.

4.2 Land Management Policy

One aspect, the lack of rural-land transaction system restricted the development of agricultural industrialization and the real transformation from rural to urban residents. Due to land property rights body is not clear, farmers' land contract right is not stable. Furthermore, existing circulation of farmland property right exists only in small sizes, low degree of private deals between farmers or deals with villagers' committee assistance, but these deals are absent of legal safeguards. Therefore, farmers transfer out of the rural areas and agricultural production only by abandoning farming. However, the difficult condition, inflexible circulation of rural land, restricted the transfer of rural labor force and led to farmers engaged in non-agricultural industries were unable to cut the links with the rural land (Zeng, and Li, 2009).

On the other hand, the urban-rural dual system of land use prohibited rural collective land to participate in urban construction land-building and this system limits the efficiency of intensive land use. In case of unclear property rights, rural collective construction land cannot be allocated equally in the market mechanism and necessary space set in the process of urbanization could not be completed neither. In particular border of urban-rural areas, people maintains a right of the rural land, but most of them work in non-agricultural trade. However, within the framework of the existing land system, more agricultural land become non-agricultural land by expropriation or requisitioning and this behavior is inequality of urban and rural development rights.

4.3 Public Administration System

The management system, municipal government administering county-level Governments, limits the development of County economy. This system began in 1980 and its purposes are to solve the drawbacks of the City-State, urban-rural divide, and share part of the provincial government and departments. Also, this system could help to reduce provincial organizations in dealing with urban problems and contradictions in the pressures and responsibilities. Studies have proved that some prefecture-level cities really play a "leadership, radiation" role to narrow the urban-rural gap gradually, but some cities still are far from any achievements (Pang Mingli, 2007). Excessive government level might have the following disadvantages: (1) Information between different level of government agencies is difficult to effectively communicate in a timely manner.(2) Power easily transferred in wrong way by separation mode and local ownership could not be guaranteed effectively. (3) Multiple levels of government organizational structure do not guarantee grass-roots power and treatment

sector. Moreover, the structure is not conducive to the mobilization of city (County) and the enthusiasm of the local governments, and it is leading to reduce effectiveness in government management.

5. Reform of Hubei's New-Urbanization Policy System

5.1 Unified Land Market Management System in Urban and Rural Areas

Land, as a factor of production, clear property rights could help farmers to benefit from agricultural land and more chance to obtain capital. The circulation of Land is the transfer of land contract in fact. Moreover, governments should expeditiously implement transfer measures of land contractual operation to ensure that farmers realize scale operation. In accordance with the law under the principle and voluntary, the Government should allow and encourage farmers to transfer the land by contract, subcontract, lease, Exchange, transfer and joint-stock methods. At the same time, relevant departments should be explored on mortgage schemes of management right about cultivated land and forestlands, to enhance the farmers' capacities in the area of financing and to raise the level of industrialization of agricultural production.

Central Government explicitly provide that "establishing and perfecting land contractual operation right transfer market", "towards the establishment of construction land in urban and rural unification market, made of rural collective construction land according to the law, in accordance with the planning and State-owned land on the premise of equal rights." "Unification of city and countryside construction land market can play a fundamental role on land resource allocation and give an equal national treatment for farmers and urban residents. Therefore, a variety of approaches for construction land must be formed clearly and quickly to build an open, fair, standardized land transfer-trading platform.

5.2 Incentive Financial and Taxation System

In 1994, the central tax distribution reform aimed at resolving the central fiscal crisis and expanding the central fiscal control. However, this change only clarifies the financial relationship between Central and provincial government, and also causes the local fiscal revenue up layer upon layer and downward transfer specific matters progressively. In detail, local governments assume the functions of the expansion of income sources and the lack of spending power. This current situation is easy to break the grass-roots local government fiscal balance, and caused local governments (counties and townships in particular) fiscal crisis. In the identified land framework of the current Constitution, local government uses the "management" way to get huge amount of land transfer income. Moreover, this behavior provides local government opens up a large financial source and fully financed by the local governments themselves. Thus the grass-root Governments would collect cultivated agricultural land in large scale, as well as increasing the cost of city life.

Therefore, reform of the current tax system needs to adjust the structure of distribution share, and increase the share of taxes for grass-roots Governments. Furthermore, the government should increase their financial autonomy and make land operational income to include in the financial budget.

First, on a regional level, tax reforms needed national efforts to increase financial support to Hubei province. The strategy, Resource-conserving and Environment-friendly Society, must be implemented with high standards. Furthermore, Hubei could not sacrifice the ecological environment for the economic growth, because ecological environment could contribute to the sustainable development of the region and the country as a whole. Therefore, central government should support Hubei Province by more financial resource than other provinces and accelerate the process of the new urbanization.

Secondly, related departments should determine the object of transfer-funds and pay more attention on the areas of high demands on environmental protection especially. In Hubei, high requirements for ecological environment limit the economic development in many cities, including mainly Western, North-Eastern and South-Eastern Mountains. Thus it is necessary that more financial support for these areas to ensure the local people's living standards and safeguard social justice.

Finally, the Central Government pointed clearly that steady process of urbanization needs to improve urban comprehensive carrying capacity to play a driving role of urban versus rural. However, in Hubei Province, most of the town's financial troubles are around public service centers in rural areas. Therefore, higher-level Government must step up financial support to the small town and let the transfer payment system be the main way to guarantee the provision of basic public services in cities and towns.

5.3 Progressive Residential Permit System

Many other Chinese provinces are gradually being developing residence permits as a measure of population management system and making the original household registration system has improved. Residential permit system, in Guangdong, Shanghai and other provinces, is not only buying threshold or having a high-tech job to have the living permit and the system should set residence social security insurance period as fundamental concerns.

Current Hubei province household registration reform should focus on the following:(1) people can apply for a residence permit with legal work, shelter, steady income and living condition.(2)people can have the basic social insurance rights(compulsory education and free primary health care) like a local citizens, if they paid tax and had no criminal record.(3)people can have social assistance eligibility, such as minimum living wage and affordable housing, only after they paid a certain amount of social insurance and taxes. (4)In large cities, like Wuhan, some special industry employment qualifications can be released with gradual conditions.

5.4 Regional Cooperation of Public Management System

On the basis of 'province governing county' administrative structures and strategic space arrangements, Hubei province should explore more ways to build a system of the regional joint governance. The particular governance aims to achieve the greatest degree of resource mobilization through multiple group's dialogue, coordination and cooperation. In addition, effective governance could complement shortages of market exchange and above-down government control, and ultimately achieve 'win-win' comprehensive social governance purpose. Finally, the governance would play a crucial role in promoting regional cooperation, enhancing regional competitiveness, accelerating democracy process and promoting administrative reform.

Hubei province could divide different economic area into a number of joint governance areas by industrial clarification, natural condition and target location. Then, ' Joint Commission', with all counties and cities in the same right platform, could discuss various subjects of coordinated development within the settlement area. Moreover, this commission would solve industrial isomorphism and low-level repeated construction effectively. At the same time, it could not avoid that regional blockades, market segmentation and unhealthy competition issues could come out from their own benefits.

6. Conclusions

In china, urbanization is a product from economic-social development and reform of urbanization could provide a direction for growth of urbanization's quantity and improvement

of urbanization's quality. To conclude, new urbanization reform should include four important ideas--land use, household registration administration management and taxation system. Firstly, land use management and social security system should be equal between urban and rural areas. Moreover, equal land use system need to establish ' fairness' in land use and ideas of land circulation, also need to treat property rights of rural land evenly. Nevertheless, social security system could be implemented to achieve social insurance evenness. Secondly, reform of population management system might link up with perfection of social security system to restore the essential role of household registration administrative measures. Finally, reasonable decentralization and reduction of management layers could improve the management efficiency in new urbanization reformation. Reference

Endnotes

* According to *China Urban and Rural Planning Law*, administrative region consists of four levels--Province, City, County, and Town.

References:

Cao, J. 2001. Reforming Household Register Policy: Promoting Rural-Urban Migrating and Urbanization. *Population Research*. 2001(5), pp.9-17

Fang, Z. 2010. Mechanism of Urbanization and Domestic Demands in China. *Modern Economic Research*. 2010(3), pp.49-53

Gu, S., Li, H., Wu, J. 2009. Reform of Household Register Policy: Improvement of China's Urbanization Policy. *China Economy Times*. 09 Dec. 2009, p.5.

Hu, J. 2005. *Research on China's New-Urbanization*. PhD Thesis. South-West Agriculture University.

Mei, H. 2011. Social Safeguard: Road to New-Urbanization. *Journal of the Party School of the Central Committee of the C.P.C.* 2011(2), pp.66-69.

National Development and Reform Commission. 2011. *Path to Future China's Urbanization* [Online]. Available at: http://www.ndrc.gov.cn/zjgx/t20120327_469844.htm [Accessed: 16 July 2013].

Pang, M. 2007. Province-Managed County: Trend of Chinese Local Government System Reform. *Chinese Public Administration*. 2007(6), pp.21-25.

Peng, H., Yang, F. 2010. Proper Concept of New-Urbanization in China. *Theoretical Exploration*. 2010(4), pp.75-78.

Qiu, B. 2010. Path of China's New-Urbanization. *China Development Observation*. 2010(4), pp.56-58.

Qiu, B. 2012. New-Urbanization: From Conception to Action. *Administration Reform*. 2012(11), pp.11-18.

Song, G., Wu, C., and Wang, Y. 2006. Relationship between Urbanization and Agricultural Land in China. *Issues in Agricultural Economy*. 2006(1),64-67,80.

Wen, T. 2000. Path of Chinese Urbanization and Relative Institution Issue. *China Opening Herald*. 2000(5), pp.21-23.

Wu, J., Wang, B., and Shen, L. 2009. Conduct of Chinese Local Government during Process of Urbanization. *Chinese Public Administration*. 2009(3), pp.88-91.

Yang, B., Chen, P. 2011. How to Achieve New-Urbanization for China? *Urban Planning Forum*. 2011(1), pp.1-7.

Zhang, L. 2009. The Second Transition of China's Population Structure and Urbanization. *City Planning Review*. 2009(10), pp.10,35-44.

Zhou, Y. 2006. The speed of China's Urbanization. *City Planning Review*. 2006(S1), pp. 32, 35-40.

Estimation of the Water Resource Capacity of Chinese Cities and Megalopolises in the Future Urbanization

(Estimation of the Water Resource Capacity of Chinese Cities and Megalopolises)

Danming ZHANG*, School of Architecture, Tsinghua University, China
 Anrong DANG[§], School of Architecture, Tsinghua University, China

1. Introduction

With 30 years' fast and stable development, China has become the second largest economy, meanwhile, the national water consumption has increased 1.37 times from 1980 to 2010 (Liang,1998; NBSC,2011), which undermines the sustainability of China's current and future development. As one of the primary influential factor, the accelerated urbanization has contributed much to the water consumption increase of China in the past 30 years (Liu,2012; Shen, Liu,2008; JIANG,2009). In 2011, the urbanization ratio of China has firstly reached 51.3%, however, predicted by the United Nations (2012), the accelerating phase of Chinese future urbanization will generally finish around 2035-2045, which means urbanization ratio reaches 70%(Figure 1). Consequently, in the future, the on-going urbanization process will continue to influence the structure and gross amount of water demand in Chinese urban area (Liu,2012; Shen, Liu,2008).

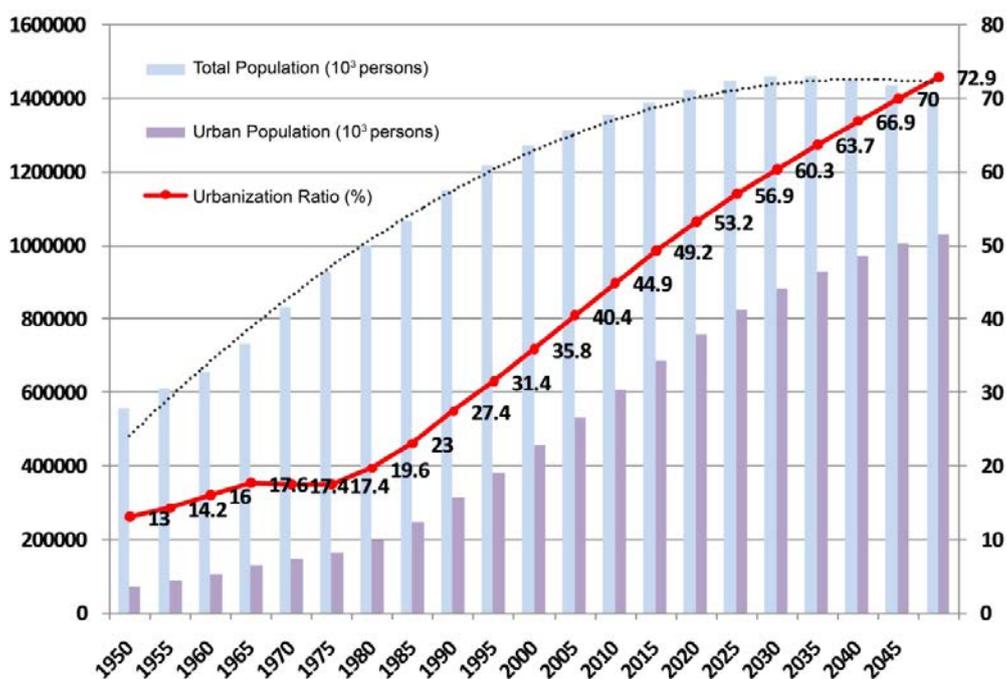


Figure 1: Historical and predicted urban and the total population of China(1950-2050)
 (Drawing by the data of UN World Urbanization Prospects2007)

As water scarcity and regional maldistribution is always the dominant constraint for Chinese development (Jiang,2009; Shen,2008), facing the future trend in urbanization, Chinese current issues related to water resource will be much severer, such as the extra investment

on water conservancy facilities, the contradiction among multiple megalopolises in water resource allocation, and the further over-exploitation of groundwater in some urban area etc. Accordingly, water resource is one of the central factors to consider for the urbanization and the accompanied population redistribution process in the future. Specifically, the 656 county-level (and above this level) cities will be the foremost locations to settle the emigrated rural population and transmigrated urban citizens (Figure 2).

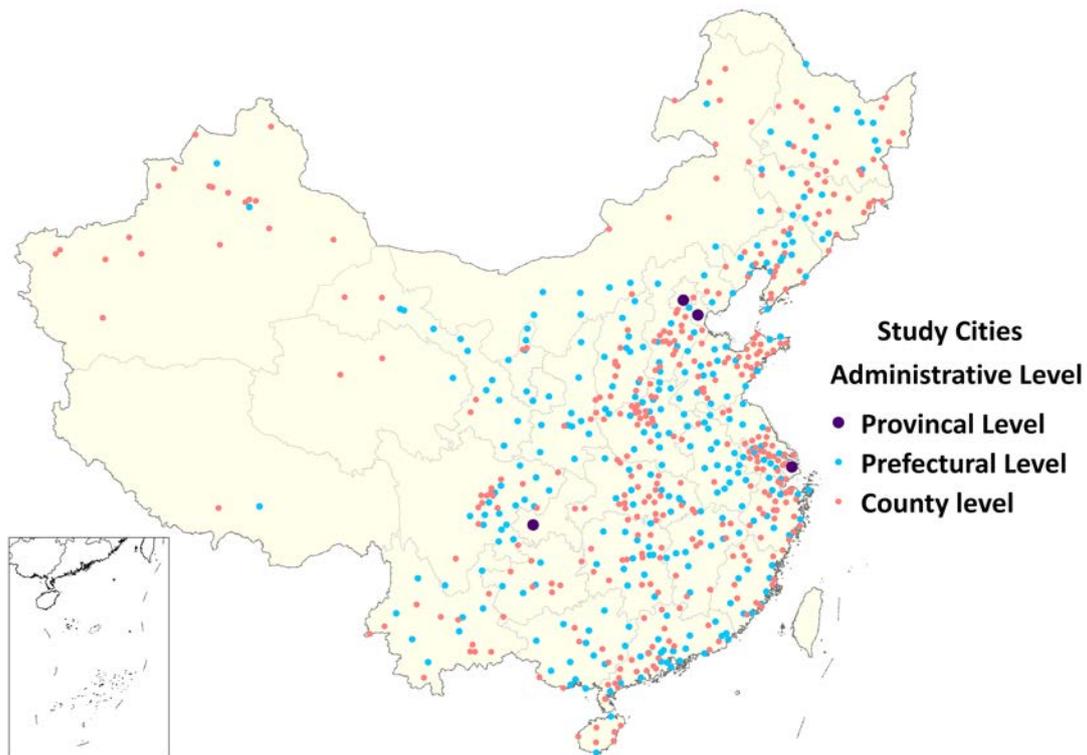


Figure 2: Spatial distribution of the 656 county-level (and above this level) cities of China

To facilitate the potential population migration process and to benefit its social and economic development in the long run, China has issued several national spatial strategic planning, including the “National Urban System Planning(2006-2020)”, and the “Major Function Oriented Zoning”(Figure 3), which are sponsored and implemented by the Ministry of the Housing and Urban-Rural Development(MOHURD) and National Development and Reform Commission(DNRC) of China respectively.

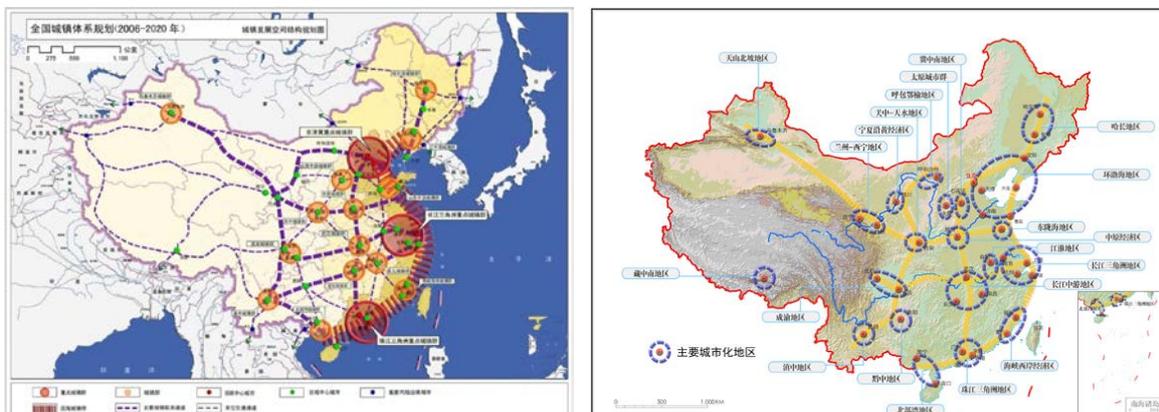


Figure 3: Important national spatial strategic plans of China

In these national spatial strategic planning, there are 22 megalopolises or mega-regions that are proposed and encouraged to accommodate the newly emigrate rural population with both central governmental fiscal resources and supportive policies (Figure 4). The candidacy of these 22 megalopolises is generally based on their existing advantages and future potential in industrial accumulation and economic development, while the plausible environmental constrains or impacts, especially in water aspect, have not been cautiously discussed or fully emphasized.

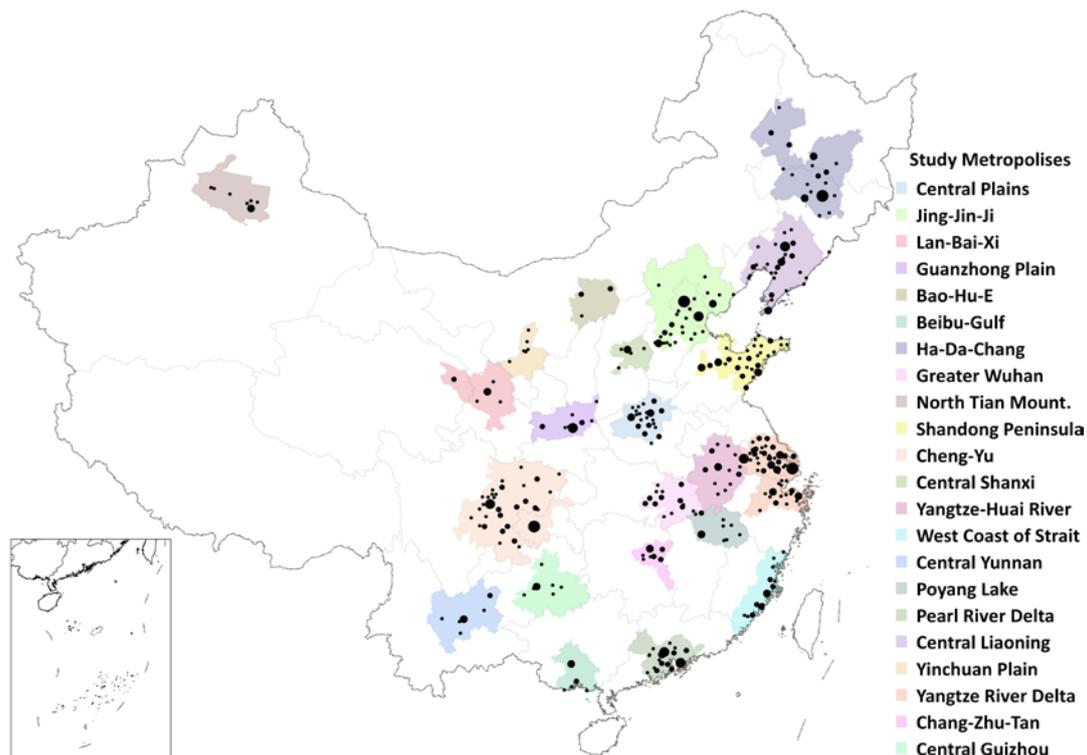


Figure 4: Spatial distribution of the 22 proposed megalopolises for Chinese future Urbanization

At present, there are two thirds of Chinese cities are suffering from water insufficiency, and about 100 cities are extremely lacking of water supply. During the future urbanization process, the enhancing demographic and economic density in some urban area will further boost the water consumption of Chinese urban area (Shen,2008), and this process will aggravate the shortage condition in water resource of most cities as well. Nevertheless, most existing studies have basically discussed related issues on the national or regional scale from the perspectives of the water resource sector, but little research has focused on the scale of urban level and the potential demand and influence of Chinese future urban development to water resource management.

Accordingly, This paper intends to estimate the water resource capacity of Chinese cities and to suggest the potential strategies for those cities in responding to the challenges during Chinese future urbanization. Based on the water-related statistical data from *China City Statistic Yearbook* and public statistical reports of the study cities, this paper intends to utilize the approaches of spatial analysis and spatial statistics to estimate the water resource capacity of the 656 Chinese county-level (and above this level) cities under the stress of future urbanization process, which will help to identify and indicate the potential and feasibility of Chinese cities to accommodate the newly emigrated population from the rural area and the suitability to further accumulate or develop related industries. In addition, this research will also estimate the water carrying capacity of the 22 megalopolises as a whole in the future population accumulation process.

The remainder of this paper is organized as follows. In the next chapter, we introduce the methodology. Respectively, Section 3 and 4 discuss water resource background and water consumption condition of the study cities. Section 5 calculates water resource potential or population overload ratio of the study cities, while Section 6 summarizes the water resource carrying capacity for population of the study megalopolises. The paper ends with a brief conclusion of our study and practical suggestions for decision makers.

2. Methodology

As mentioned above, the goal of this work is to analyze current water resource conditions of the study cities and offer suggestions for the population accumulation of these cities and the corresponding megalopolises in facing future urbanization. When referring to water resource condition, it is always related to water resource abundance, population density and water consumption structure and efficiency, which interactively determine the potential, equilibrium and dynamics of water resource endowment and water consumption. Thus, analysis and discussion about the dynamic of population density, structure and efficiency in water consumption of the study cities will be the prerequisite to raise the suggestions for the future development of the study cities and the 22 supported megalopolises. In consequence, issues about water resource background, water consumption conditions, water resource potential and overload ratio, carrying capacity etc. of the study cities will be analyzed through the steps below (Figure 5).

Firstly, the approaches of K-means cluster analysis will be employed to classify the study cities into different categories based on the representative factors elected in each analysis. Further, based on the data of water resource amount, current population, water consumption amount of the study cities, the Method of Comprehensive Water Use per Capita, Water Carrying Capacity Index(WCCI), and other indicators are utilized to evaluate the potential or the overload ratio of the study cities and to estimate the water carrying capacity for population of the study Megalopolises. Finally, suggestions will be concluded based on the above analysis.

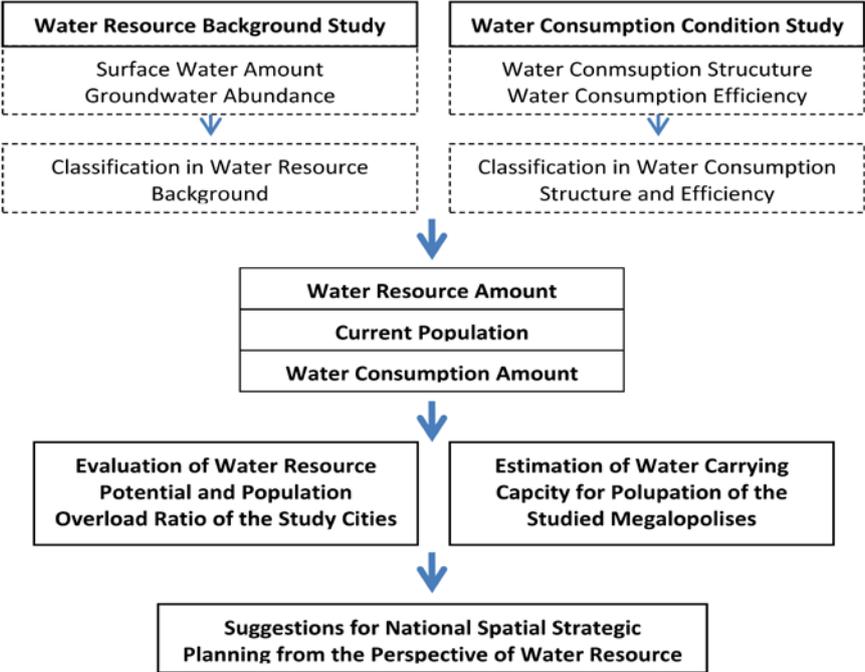


Figure 5: Framework and main procedures of this study

3. Water Resource Background Study of the Study Cities

As the broad land territory and diverse geographic characteristics of China, the natural endowments in water resource among the study cities are different. In this research, we intend to categorize the patterns of different cities in water resource richness through analyzing two factors, and that is the average annual precipitation and the abundance level in groundwater resource.

3.1 Average Annual Precipitation of the Study Cities

Precipitation is a sufficient factor to indicate the water resource background of a region. In this paper, annual average precipitation dataset in the national database of “*Data Sharing Network of Earth System Science, DSNESS*” is utilized to evaluate the surface water richness of the study cities. This dataset is processed and interpolated based on precipitation observational time-series data(1950-1996) and from almost 1915 rainfall stations distributed nationally, by the Institute of Agricultural Resources and Regional Planning, CAAS.

Based on the calculation with the spatial dataset referred above, the surface water conditions of the study cities can be summarized as follows. There are 33 cities with a rainfall depth below 200mm and 22 cities with the rainfall between 200-400mm, which are subordinated in water resource richness. Secondly, there are 242 cities are located in the region with a moderate rainfall condition between 400-800mm. Besides, there are 143 cities with a rainfall depth between 800-1200mm, and the precipitation of the left 216 cities are over 1200mm.

Through the above categorizing analysis, except for those cities located in the western arid region which has relatively worse surface water condition, most of the study cities are close or over 800mm. Accordingly, from the perspective of city location choosing, most of Chinese cities are settled in the regions with moderate or sufficient surface water potential(Figure 6).

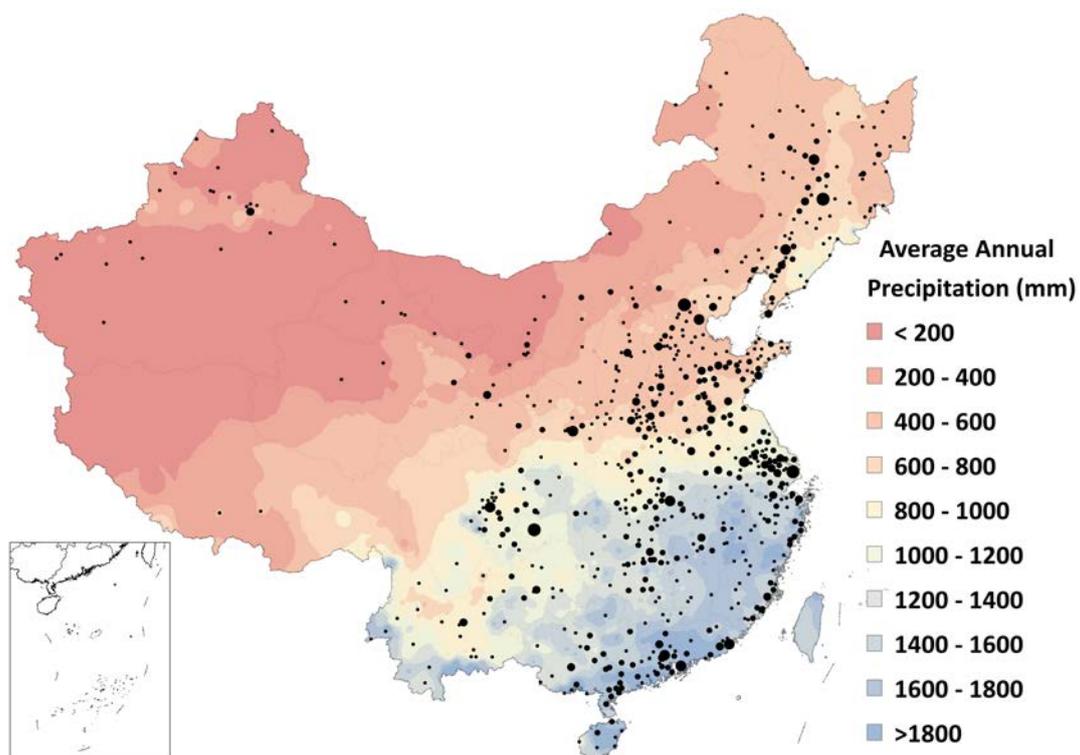


Figure 6: National average annual precipitation distribution and the location of the study cities

3.2 Groundwater Abundance of the Study Cities

According to incomplete survey, there are 400 cities that groundwater takes up more than 30% of their total water supply, and this demonstrates that the abundance of groundwater is also significant in determining the water utilization patterns of most Chinese cities. Consequently, this paper also identified the groundwater condition of the study cities through the “*Chinese Hydrogeological Information Spatial Dataset* issued by “*National Land-Resource Scientific Data Sharing Platform*”. The study cities are classified into 3-level (high, medium, low) categories based on their groundwater abundance (Figure 7). According to the above classification, most of Chinese cities’ groundwater resource is limited and the quality is about 420, while only around 150 cities have abundant groundwater resource comparatively.

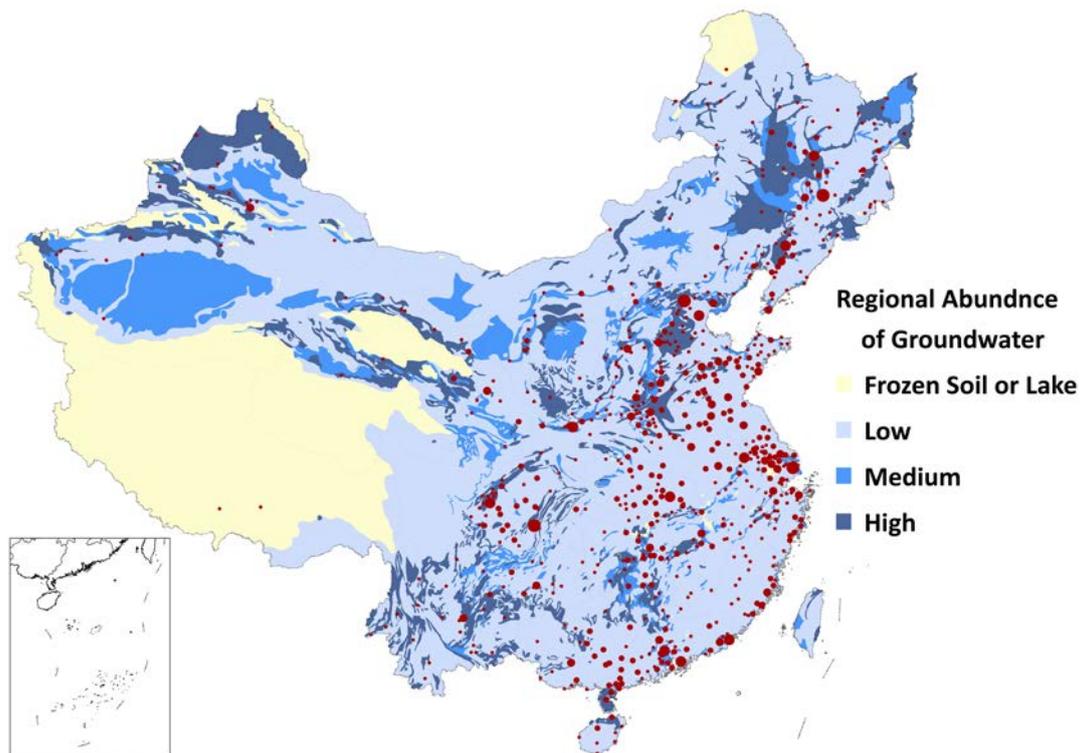


Figure 7: Groundwater-abundant-level spatial distribution of the study cities

3.3 Water Resource Background Classification of the Study Cities

When combined the two factors by K-means cluster analysis, the study cities can be classified into 9 categories that will represent the characteristics of their water resource background. The 9 categories include: High level in surface water and high level in groundwater, low level in surface water and low level in groundwater, medium level in surface water and medium in groundwater etc.(Figure 8).

From the spatial distribution pattern of the study cities, in terms of water resource background characteristics, it can be easily identified that there are two dominant types. The first type is high-level in surface water & low-level in groundwater, and these cities are mainly located in Anhui, Jiangsu, Fujian, Guangdong, Guangxi, and Hainan provinces, while the other type is medium-level in surface water & low-level in groundwater, which are mostly distributed in Jiangsu, Hubei, Sichuan, Guizhou, Anhui provinces. Comparatively, the cities in the other categories are relatively diffusively distributed.

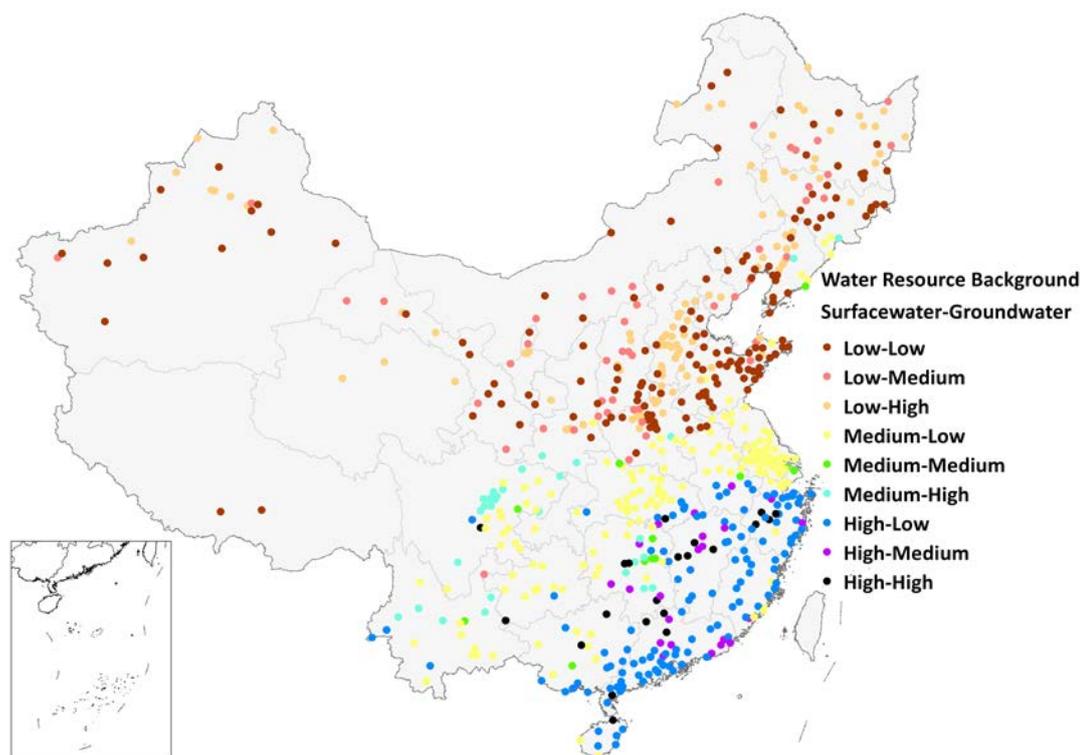


Figure 8: Water resource background classification of the study cities based on the factors of precipitation and groundwater abundance

4. Water Consumption Condition Study of the Study Cities

Water consumption structure and efficiency of the study cities contribute to the explanation about the current amount and future trend of water consumption, therefore the analysis towards these two aspects will help to understand the future dynamics of water demand of the study cities, and it is also the basis for providing suggestions in industry selection and population accumulation for the study cities and the related megalopolises.

4.1 Water Consumption Structure Classification of the Study Cities

Water consumption structure varies depending on different study objectives. From the urban perspective, water structure always includes the water consumption in industries, public service and household use. Hence, this research elected the above three influencing factors to identify the characteristics of the water consumption structure of the study cities through K-means cluster analysis in the statistical software *SPSS20.0*.

K-means Cluster analysis helps to classify the study samples by calculating the spatial distance, correlation coefficient or similarity coefficient of the samples in an N-dimensional variables' space. K-means cluster analysis is advanced in calculating speed and processing large amount of data, but its weak points are that the count of clusters should be predefined, and the final analyzing result highly relies on the features of the predefined cluster centers.

As mentioned above, the goal of this analysis is to identify the relative relationship of the study cities in industrial water consumption, public service water consumption and household water consumption, such as one use is dominant and the other two are subordinated, or the three water uses are nearly equal to one another. The identification of these relationships will be used to understand the mechanism of water demand dynamics of the study city and for raising specific suggestions.

Based on the above description, the analysis should firstly define the amount of clusters. With the general analysis towards the statistic frequency distribution of the study cities in the above 3 aspects, both industrial and household water consumption should be divided into 3 levels, while water consumption of public service should be divided into 2 levels (Figure 9). The pre-classification is based on the natural break classification method(Jenks), and the final cluster count is calculated as 13.

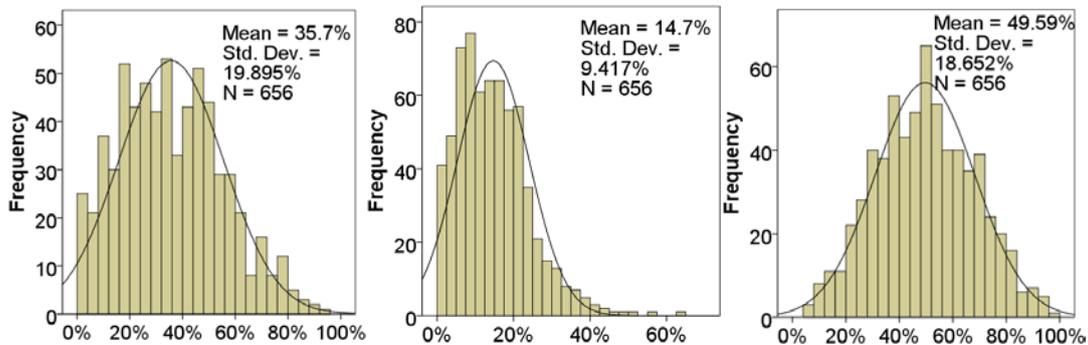


Figure 9: statistic frequency feature of water consumption in industry, public service and household

The result of K-means cluster analysis shows that there are 6-7 major categories that have a large number of cities, while the other categories have only around 20 cities.

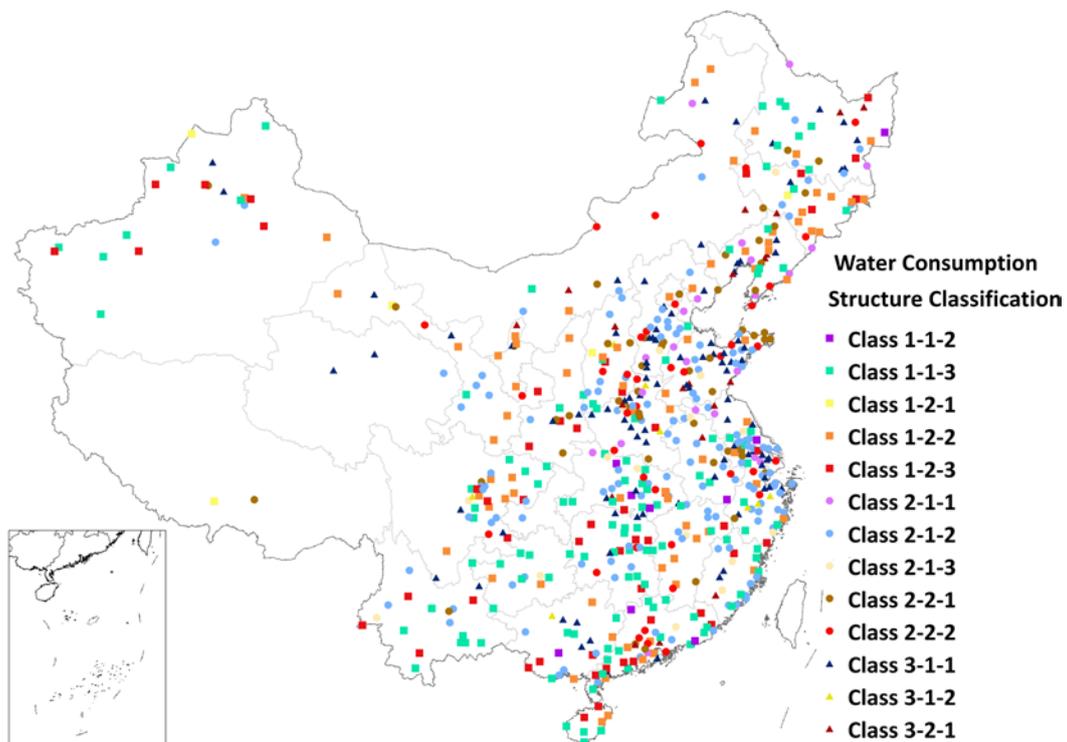


Figure 10: Water consumption structure classification of the study cities

The characteristics and final cluster center of specific categories of the study cities in water consumption structure could be referred in Table 1.

Table 1: Cluster centers and city amount in water consumption structure of the study cities

Name of the Categories	Final Cluster Centers of Water Consumption Structure			Count of Cities
	Industries	Public Service	Household	
2-1-2	42.6%	8.3%	49.1%	140
1-1-3	5.7%	8.1%	86.2%	119
3-1-1	80.5%	6.0%	13.5%	97
1-2-2	5.3%	45.6%	49.1%	78
2-2-1	39.7%	24.2%	36.1%	52
1-2-3	11.4%	20.8%	67.8%	51
2-2-2	29.9%	19.7%	50.3%	39
2-1-1	51.7%	10.1%	38.2%	22
3-2-1	55.4%	19.9%	24.7%	20
2-1-3	18.1%	7.9%	74.0%	16
1-1-2	29.5%	9.6%	60.9%	9
3-1-2	66.8%	6.1%	27.0%	8
1-2-1	20.3%	30.2%	49.5%	5

4.2 Water Consumption Efficiency Classification of the Study Cities

The improvement or falling behind in water consumption efficiency will influence the potential of the study cities in water carrying capacity. In this study, we choose 2 factors to assess their efficiency. That is water use per capita GDP which mostly reflect the efficiency in industrial water use, while the other is leaking ratio of water supply which can represent of efficiency in household use. Similarly, K-means cluster analysis method is also utilized for this analysis, and the two factors are both divided into 3 levels based on their quantity by the Jenks method before the K-means analysis. The cluster counts finally is calculated as 8, and the K-mean analysis result is shown in Figure 11.

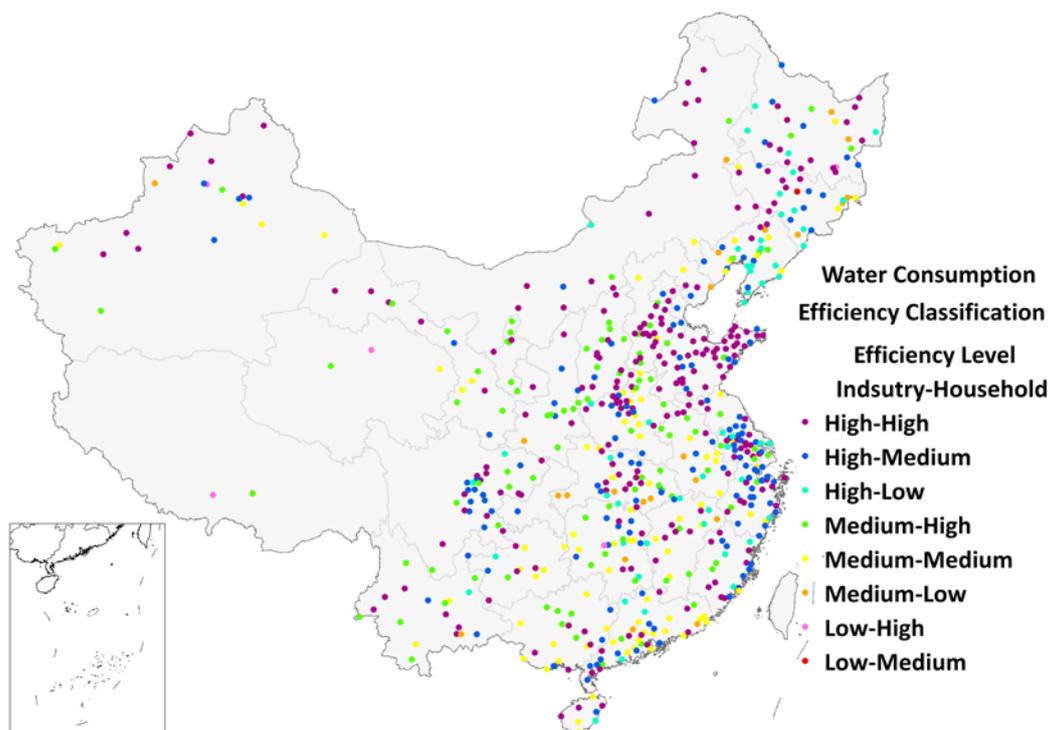


Figure 11: Water consumption efficiency classification of the study cities

Through the clustering analysis, there are 5 classes in the 8 ones are dominant classes, which are with relatively more cities. The rest classes has less cities included, and mostly is with around 20 cities. The analysis result tells us that most of the study cities are both highly efficient in industrial and household water consumption, and some others are classified into the types of high-medium or medium-high (Table 2). In consequence, from the perspective of water consumption efficiency, there is limited space left for most of the study cities to improve, unless revolutionary technical paradigms emerges and broadly utilized.

Table 2: Cluster centers and city amount in water consumption efficiency of the study cities

Name of the categories Efficiency in Industries- Efficiency in Household use	Final Cluster Centers		Count of Cities
	Water use per capita GDP (m ³ /10000yuan)	Leaking Ratio of water supply(%)	
High-High	6.68	9.3%	239
High-Medium	13.99	11.2%	141
High-Low	21.44	12.4%	53
Medium-High	42.26	9.5%	102
Medium-Medium	30.80	11.9%	92
Medium-Low	96.70	14.1%	23
Low-High	82.30	4.4%	5
Low-Medium	185.49	9.3%	1

5. Water Resource Potential or Population Overload Ratio of the Study Cities

Water Carrying Capacity means that, under different social and technical conditions, the amount of population or economic development a city or watershed can sustained (Zhu, Xia et al., 2002). There many methods to evaluate the water carrying capacity, including multi-criteria analysis, tendency analysis, comprehensive water use per capita, system dynamics, fuzzy evaluation etc. (Duan, Chen et al., 2010; Sun, Zheng et al. 2006; Zhu, Xia et al., 2002).

In this study we apply the approach of comprehensive water use per capita referred by related scholars (NPFPC, 2009; Zhang, Feng et al. 2008). The key of this method is to analyze and determine the comprehensive water use on average for a single person, which mostly includes household, public service, industrial, and environmental use etc. Internationally, 500m³/capita is considered as the benchmark of severe water shortage, and this value is fixed as comprehensive water use in this analysis based on the consideration of Chinese actuality. Besides, the equations of this method are as follows.

$$WCC = W / W_{pc} \quad (1)$$

$$WCCI = P_a / WCC \quad (2)$$

$$R_p = (P_a - WCC) / WCC * 100\% = (WCCI - 1) * 100\% \quad (3)$$

$$R_w = (WCC - P_a) / WCC * 100\% = (1 - WCCI) * 100\% \quad (4)$$

In (1), **WCC** is water carrying capacity of the city (the unit is persons); **W** is the total available water resource of the city (m³); **W_{pc}** is the comprehensive water use on average (m³/capita)

In (2), (3), (4), **WCCI** is water carry capacity index, which indicate the potential of future water supply or overload condition of population in terms of water resource; **WCC** is water carrying capacity of the city; **P_a** is the actual population of the city (person); **R_p** is the population overload ratio of water resource of the city; **R_w** is water sufficiency ratio of the study city.

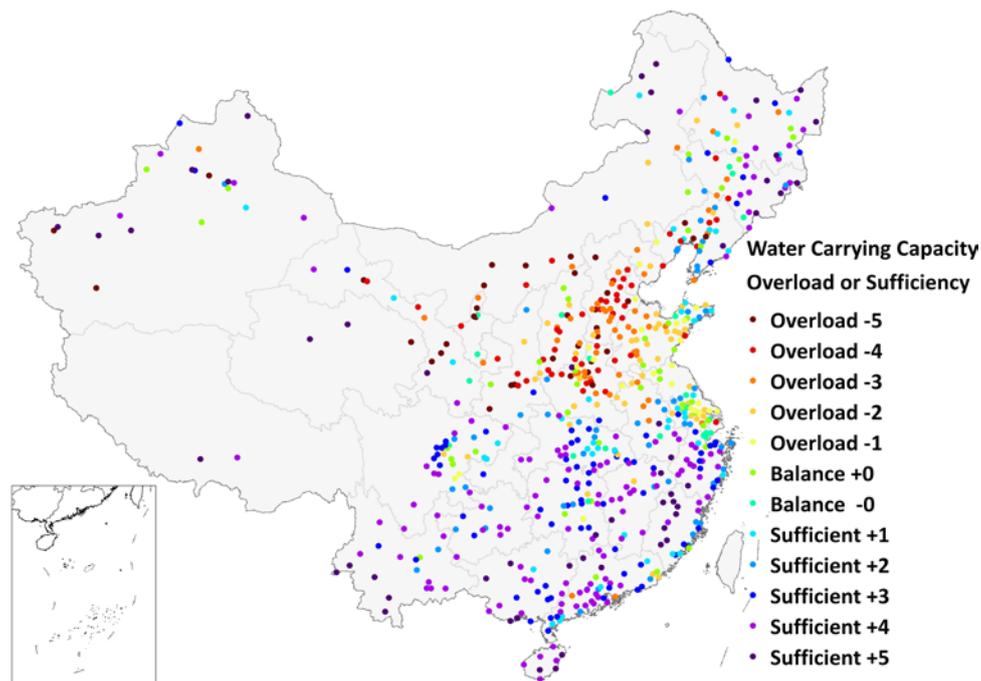


Figure 12: Water resource potential or population overload ratio of the study cities

In general, the analytical result shows that most Chinese cities are still relatively sufficient in water resource (Figure 12, Table 3), while there are 265 overloaded cities, which takes up 40.4% of the total cities, and only 144 cities have been over one time of the calculated capacity and just less than 90 cities have surpassed twice of the capacity. Comparatively, the overloaded cities are also highly concentrated spatially, which mostly distributed in Hebei, Shanxi, Henan, and part of Shandong, Jiangsu provinces etc..

Table 3: Indicator calculation and classification in Water Carrying Capacity of the study cities

Categories	Carrying Capacity	Indicators of Water Carrying Capacity			Count of Cities
		Water Carrying Capacity Index (WCCI)	Population Overload Ratio (Rp)	Sufficient Ratio of Water Resource (Rw)	
Water resource Sufficiency	+5	<0.1		Rw>90%	53
	+4	0.1-0.3		70%<Rw<90%	131
	+3	0.3-0.5		50%<Rw<70%	81
	+2	0.5-0.7		30%<Rw<50%	60
	+1	0.7-0.9		0%<Rw<30%	44
Generally Balanced	+0	0.9-1.0		0%<Rw<10%	22
	-0	1.0-1.3	0%<Rp<30%		45
Water Resource Overload	-1	1.3-1.5	30%<Rp<50%		26
	-2	1.5-2.0	50%<Rp<100%		50
	-3	2.0-3.0	100%<Rp<200%		56
	-4	3.0-6.0	200%<Rp<500%		51
	-5	>6.0	Rp>500%		37

6. Water Resource Carrying Capacity for Population of the Study Megalopolises

Based on the above analysis of the study cities, we further make a summation to the 22 megalopolises that are supposed to be the centers for population and industry accumulation during Chinese future urbanization. In the 22 megalopolises, the highest potential ones to sustain future population, from the perspective of water capacity, are Ha-Da-Chang, Cheng-Yu, Pearl River Delta megalopolises, which can absorb 50 million more people in the future. The secondary level megalopolises in future water capacity are Beibu Gulf, West Coast of Strait, Poyang Lake, Greater Wuhan, Chang-Zhu-Tan, Central Guizhou, which can sustain 10-20 million more population if needed. Besides, even part of the cities in Central Yunan, Yangtze-Huai River, North Tian Mount megalopolises has appeared to be overloaded in capacity, there is still relatively great potential capacity for them to receive and accumulation more people if considering the city clusters as a whole (Table 4, Figure 13).

Table 4: Population overload condition or future potential in water capacity of the study megalopolises

Megalopolis Name	City Count	Count of overloaded cities	Overloaded population (10 thousand)	Count of sufficient cities	Further carrying potential (10 thousand)	Net population Capacity (10 thousand)
Ha-Da-Chang	17	6	559.1	11	-5438.4	-4879
Cheng-Yu	31	8	423.9	23	-5014.6	-4591
Pearl River Delta	17	1	620.9	16	-4894.0	-4273
Beibu Gulf	5	0	0.0	5	-2223.2	-2223
West Coast of Strait	14	2	93.3	12	-1919.6	-1826
Poyang Lake	9	1	98.8	8	-1707.4	-1609
Greater Wuhan	16	2	39.9	14	-1369.1	-1329
Central Guizhou	7	0	0.0	7	-1069.2	-1069
Chang-Zhu-Tan	7	2	112.8	5	-1094.3	-982
Central Yunnan	6	1	31.5	5	-683.8	-652
Yangtze-Huai River	13	4	371.0	9	-829.2	-458
North Tian Mount	8	4	106.5	4	-371.2	-265
Central Liaoning	28	13	1327.8	15	-1417.2	-89
Yangtze River Delta	50	22	2828.5	28	-2835.6	-7
Yinchuan Plain	6	5	199.4	1	-0.5	199
Bao-Hu-E	3	3	282.7	0	0.0	283
Lan-Bai-Xi	5	4	380.2	1	-13.6	367
Central Shanxi	5	4	379.7	1	-1.9	378
Guanzhong Plain	8	8	775.0	0	0.0	775
Shandong Peninsula	30	22	1273.4	8	-155.8	1118
Central Plains	23	21	1436.9	2	-7.6	1429
Jing-Jin-Ji	27	27	3294.0	0	0.0	3294

On the contrary, for the overloaded megalopolises, Jing-Jin-Ji has extremely surpassed the capacity of the region, and all the cities included in the megalopolis has crossed the baseline of water carrying capacity of the cities. The amount of overloaded population in Jing-Jin-Ji megalopolis is around 33million. Secondly, the megalopolises of Central Plains, Shandong Peninsula, Guanzhong Plain are also heavily overloaded, and the overloaded population are

about 10 millions. Besides, the megalopolises of Central Shanxi, Lan-Bai-Xi, Bao-Hu-E, Yinchuan Plain are also experiencing, relatively lower, pressure from water capacity.

For Yangtze River Delta, Central Liaoning megalopolises, some of the cities are overloaded in water capacity, while some other cities still have huge potential to carry more population in the future.

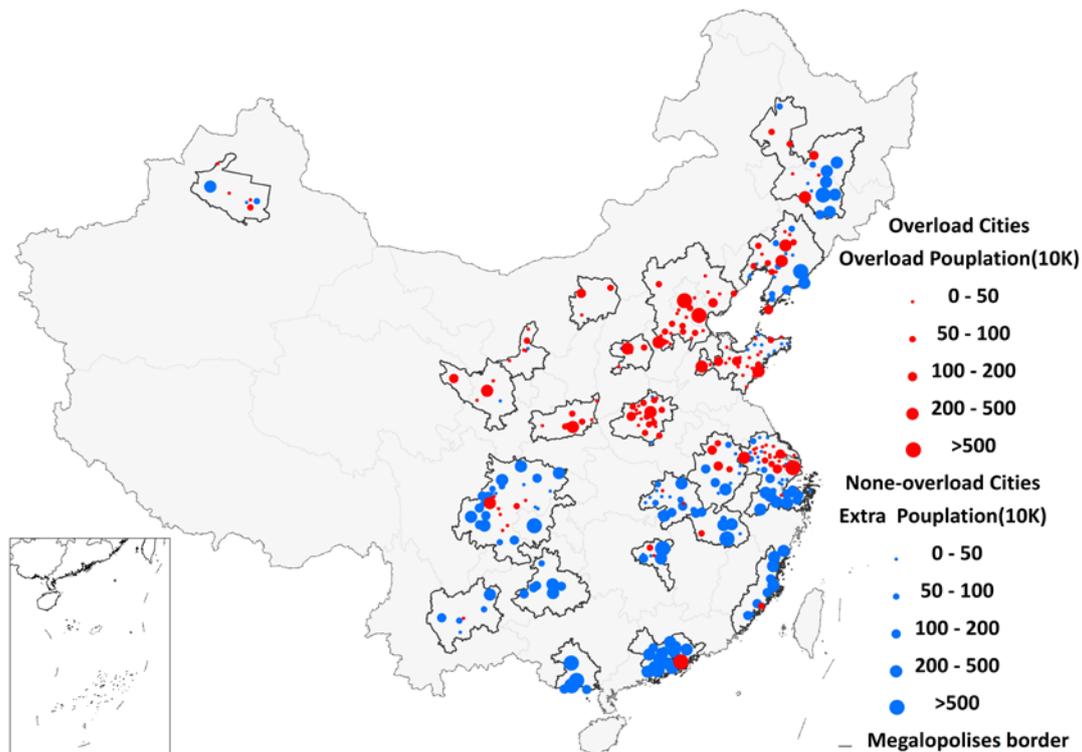


Figure 13: Population overload or future potential in water capacity of study cites and megalopolises

7. Conclusion and Policy Implication

Compared with the most existing studies, the prospect contribution of this paper is to study the water resource related issues, including water resource conditions, water consumption structure and efficiency, water consumption amount and water resource carrying capacity, in a much finer spatial scale(city level) and from the perspective of urban studies. By identifying the potential water resource capacity and constraint factors of different cities, suggestions about population potential and megalopolises' developing and water management policies are raised to lead Chinese urbanization process towards a more sustainable pattern.

Through the study result, we can initially conclude that, for the studied Chinese cities and especially the 22 focused megalopolises, the cities located inside Pearl River Delta and Cheng-Yu megalopolises should be the national central urbanization emphasize compared with the other two primary ones (Jing-Jin-Ji and Yangtze River Delta), from the perspective of future water carrying capacity. Combined with the consideration about social and economic development, Greater Wuhan, Western Coast of Strait, Chang-Zhu-Tan megalopolises should be more supported with encouraging policies and central governmental fiscal resources to spur the future accumulation in population and industries, as they are also advanced in water carrying capacity. Besides, Beibu Gulf, Poyang Lake, Central Yunnan, Central Guizhou megalopolises could also be relied on in receiving more newly emigrating population from rural area in the future, even the economic development of these megalopolises are relatively subordinated.

In the future studies, there are still many aspects to be improved. Firstly, more water carrying capacity analyzing methods could be utilized to reflect the condition of study cities and megalopolises from various perspectives. Secondly, classification analysis in water consumption structure and water consumption efficiency should be combined with the analysis in water carrying capacity, which will offer more practical conclusions and suggestions for the study cities and megalopolises. Furthermore, because most of Chinese policies are based on the cost-benefits in economics, it would be necessary to conduct cost-effective evaluation to the study cities and megalopolises based on the estimation of overall efficiency and benefits of the accumulated population and industries in specific cities or megalopolises when considering the potential pulling effect from water resource or other related environmental aspects.

Notes:

* This research is supported by *Urban China Initiative* (a non-governmental organization)

§ Contact Author: Anrong DANG, School of Architecture, Tsinghua University, Beijing(100084), P.R. China. Email: danrong@mail.tsinghua.edu.cn

References:

- DUAN CQ,LIU CM,CHEN XN,LIU WH,ZHENG HX. (2010). Preliminary Research on Regional Water Resources Carrying Capacity Conception and Method. *Acta Geographica Sinica*, Vol.65 No.1,82-90 (in Chinese)
- HUANG, T. & PANG, Z. (2013) Groundwater Recharge and Dynamics in Northern China: Implications for Sustainable Utilization of Groundwater. *Procedia Earth and Planetary Science*, Vol.7 No.0, 369-372.
- HUANG, Y., JIANG, D., ZHUANG, D., ZHU, Y. & FU, J. (2014) An improved approach for modeling spatial distribution of water use profit—A case study in Tuhai Majia Basin, China. *Ecological Indicators*, Vol. 36 No.0, 94-99.
- JIANG, Y. (2009) China's water scarcity. *Journal of Environmental Management*, Vol.90 No. 11 , 3185-3196.
- LIANG, RJ, XL YANG, J WANG(1998). Actuality of Demand and Supply in Chinese Water Resource. *Water Resources and hydropower engineering*, Vol.29 No.10 (in Chinese)
- LIU, H. (2012) Comprehensive carrying capacity of the urban agglomeration in the Yangtze River Delta, China. *Habitat International*, Vol. 36 No.4, 462-470.
- (NBSC)National Bureau of Statistics of China. (2011). *China Statistical Yearbook 2011* (in Chinese). Beijing: China Statistics Press.
- (NPFPC)National Population and Family Planning Commission of P.R. China.(2009). *Population Development Oriented Zoning Study*. Beijing: World Knowledge Press (in Chinese)
- SHEN D. & LIU, B. (2008) Integrated urban and rural water affairs management reform in China: Affecting factors. *Physics and Chemistry of the Earth, Parts A/B/C*, Vol. 33 No. 5, 364-375.
- Sun, FX, CY ZHENG,(2006). Method and thinking of water resource carrying capacity study. *Yangtze River*, Vol.37 no.2, 33-36 (in Chinese)
- United Nations (UN), Department of Economic and Social Affairs, Population Division, (2012), *World Urbanization Prospects, the 2011 Revision. Final Report with Annex Tables*, New York.
- ZHANG, D, ZM FENG, LIU DW (2008). Evaluation of Water Resource in Third2Order Basins in China based on Carrying Capacity. *Resources Science*, Vol. 30, No.10, 1471-1477(in Chinese)
- ZHANG, Y., CHEN, M., ZHOU, W., ZHUANG, C. & OUYANG, Z. (2010) Evaluating Beijing's human carrying capacity from the perspective of water resource constraints. *Journal of Environmental Sciences*, Vol,22 No.8, 1297-1304.
- ZHU, YZ, XIA J, G TAN (2002). A Primary Study on the Theories and Process of Water Resources Carrying Capacity. *Progress in Geography*, Vol. 21, No. 2, 180-188 (in Chinese)

Increasing Cities and Shrinking Regions **(Increasing Cities and Shrinking Regions: Migration in China's Urbanization—** **—Cases from Sichuan and Henan Provinces)**

Li Zhang, China's Academy of Urban Planning & Design, China

1. Migration and China's Urbanization

In the past 30 years, China has put forward the urbanization in an amazing speed. From 1978 to 2011, the level of Chinese urbanization increased from 17.92% to 51.27%, urban population increased from 172.45 million to 690.79 million. The urbanization level increased 1.01% one year and population in city and town grew 15.71 million per year. The Urbanization is an inevitable end of migration from countryside to city. Likely, high-speed urbanization in China accompanied with a huge amount population migration as well. In the past thirty years, natural growth rate of urban population was less than 10% (National Bureau of Statistics of China 2012a); thus the main part of Chinese urban population growth was the migrant population from countryside to city.

Under the special household registration system in China (that is, agricultural population and non - agricultural population registration system), some of migrants from countryside can become non - agricultural population which means permanent residence in city while others can only obtain employment without the registered non-agricultural Hukou, which are called rural migrant workers. From 1978 to 2010, urban registered non-agricultural population increased from 152.30 million to 459.64 million (National Bureau of Statistics of China 1999, 2011); while rural migrant workers increased from 20 million in 1983 to 242.23 million in 2010 (National Bureau of Statistics of China, 2012b). Both population increase caused the rapid expansion of urban population in China. According to China's Sixth Census in 2010, there were 231.31 million flowing people in cities and towns, which accounted for 34.5% of Chinese total city residential population. The rural migrant workers who cannot obtain permanent residence have become a very important part of Chinese urban population. Since these people cannot completely integrate themselves into urban society only being migrant population between cities and countryside, inadequate urbanization (Tang 2009, Hu SL2012) comes into a specific phenomenon in China.

There are two moving directions of migrant people: movement to nearby cities and to long-distance cities. According to migration workers monitoring and investigating report 2011, number of migration workers from countryside to nearby cities was 88.88 million and the number of long-distance movement migration workers was 153.35 million in 2010. The census 2010 of China indicates, there were 260.94 million migration people in 2010, 15% of them was moving inside the city they registered in, 52% was moving inside their registered province, while 33% was moving from their registered province to the other province. Data from these two different sources fit well, and both indicate total amount of Chinese migration population has already reached 0.22 billion and above.

For across-province migrants, developed provinces or cities like Guangdong, Zhejiang, Shanghai, Beijing and Jiangsu etc. are the main destinations. Relatively economically undeveloped but with huge population provinces are the headstream such as Anhui, Henan, Sichuan, Hunan, Hubei, Jiangxi etc. The across-province emigrants from Anhui, Henan and Sichuan were above 8.6 million (The Census Office of the State Council and National Statistics Bureau of China 2012).

Thirty years of huge population migration has gradually caused the reconstruction of population distribution both in urban & rural areas and in east and middle-west regions.

2. Growing Cities and Shrinking Regions—Population Reconstruction in the Middle-west Provinces of China

Middle-west provinces are the main source of emigrants in China. Since 2012, author of this paper had been participating into two important regional and city planning projects, City System Plan of Sichuan Province and Xinyang City Master Plan in Henan Province. Analysis of historical population development and forecast of future population distribution are major elements in these projects. And a new population phenomenon in middle-west provincial migrating was found, that is the phenomenon of increasing cities and shrinking regions.

2.1 Sichuan Province

Sichuan is one of most populous provinces in the west of China. It also has the largest emigrating population in the west provinces. Since the large - scale development of China's western region from 2000, a large number of infrastructure projects were put into western regions. Meanwhile, preferential policies in terms of tax and industries were given to the western region(Chen SZ2010). In this context, Sichuan Province had entered into the rapid growth period of urbanization since the year 2000. From 2000 to 2010, the urbanization rate of Sichuan Province increased from 27% to 40%(The Census Office of the State Council and National Statistics Bureau of China2002, 2012), and the average increase rate is 1.3% per year. However, the population structure changes more complexly along with the rapid growth of urbanization.

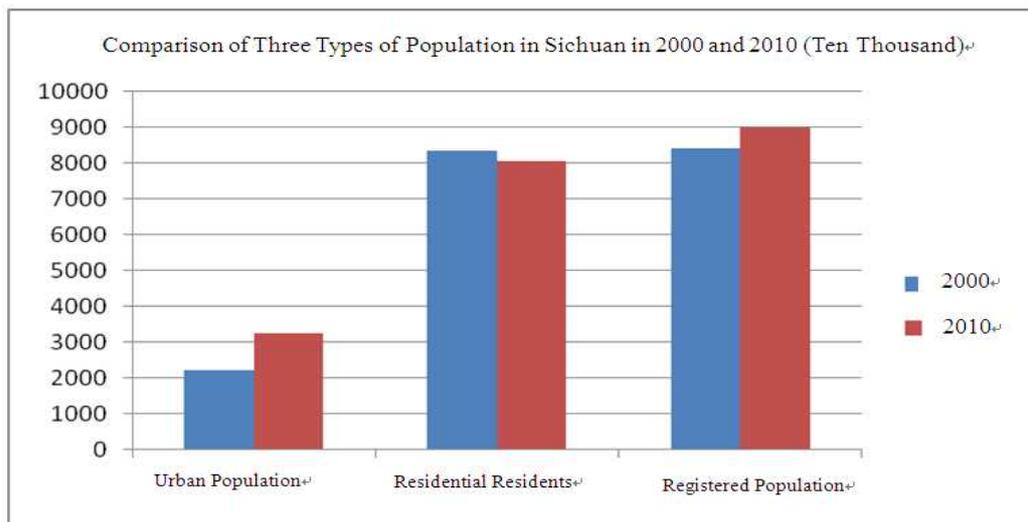


Figure 1: Comparison of Three Types of Population in Sichuan

From 2000 to 2010, the urban population of Sichuan Province increased from 22.23 million to 32.31 million, the residential population decreased from 83.29 million to 80.42 million, and the registered population increased from 84.02 million to 89.98 million(The Census Office of the State Council and National Statistics Bureau of China2002, 2012). During the ten years, the registered population was relatively stable while the residential population was decreasing, which means a large number of people moving out to the other province. And the net outflow population number increased from 3.67 million to 9.57 million. Then, the rapid-growth urban population was in great contrast with the decreasing residential population. The reason why urbanization rate grown so quickly is, that the decreasing residential population was used as the denominator of urbanization population.

In Sichuan Province, there are 21 city areas which centered around the core cities and form into uniform administrative unities and economic areas. As figure 2 showed, 16 of 21 city areas had the similar shrinking phenomenon of residential population as Sichuan Province. There are only 5 areas different from Sichuan Province. One is Chengdu, the economic center and capital of Sichuan Province. The other three are Aba, Ganzi and Liangshan areas, which locate on the edge mountain regions of the administrative districts of Sichuan Province (The Office of the Population Census & Bureau of Statistics of Sichuan Province2002,2012).

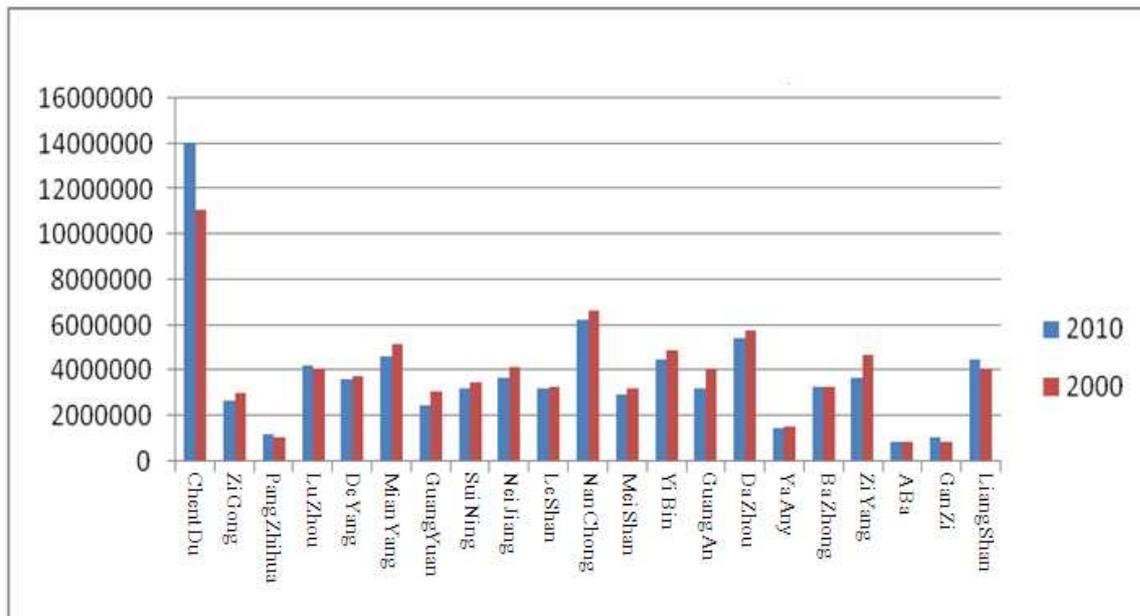


Figure 2: Comparison of the Residential Population in Different Areas of Sichuan
Data source: 2000,2010 census of Sichuan Province

The emigrant phenomenon was more serious when compared the registered population with the residential population of each city area. Apart from Chengdu city, all the other city areas had population shrinking phenomenon with less residential population than registered population. However the urban population in all the areas had showed a trend of rapid growth.

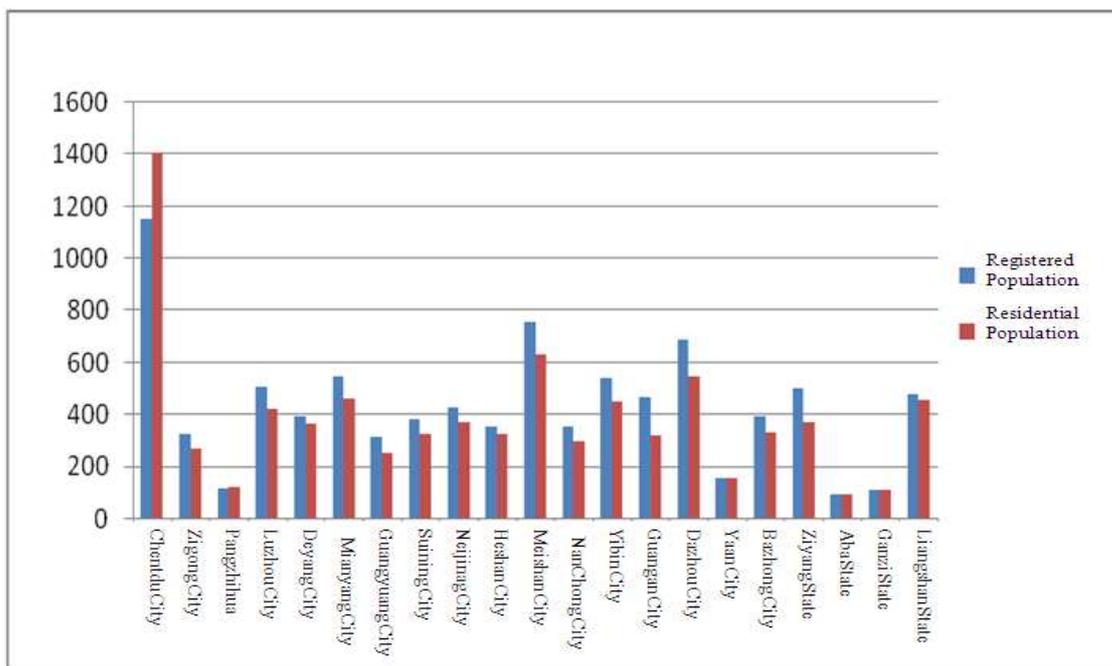


Figure 3: Comparison of the Registered Population and Residential Population in 2010
Data source: 2000,2010 census of Sichuan Province

2.2 Xinyang City in Henan Province

Henan Province is both populous province and large emigrating province. Xinyang is the southeast city of Henan Province with registered population of 8.46 million and residential population of 6.11 million. The net emigrating population is 2.35 million, accounting for 28% of the total registered population. From 2000 to 2010, the registered population of Xinyang

increased from 7.66 million to 8.46 million, while the residential population reduced from 6.53million to 6.11million (Office of the Population Census of Xinyang City2002, Xinyang City Bureau of Statistics & Office of the Population Census of Xinyang City 2012).

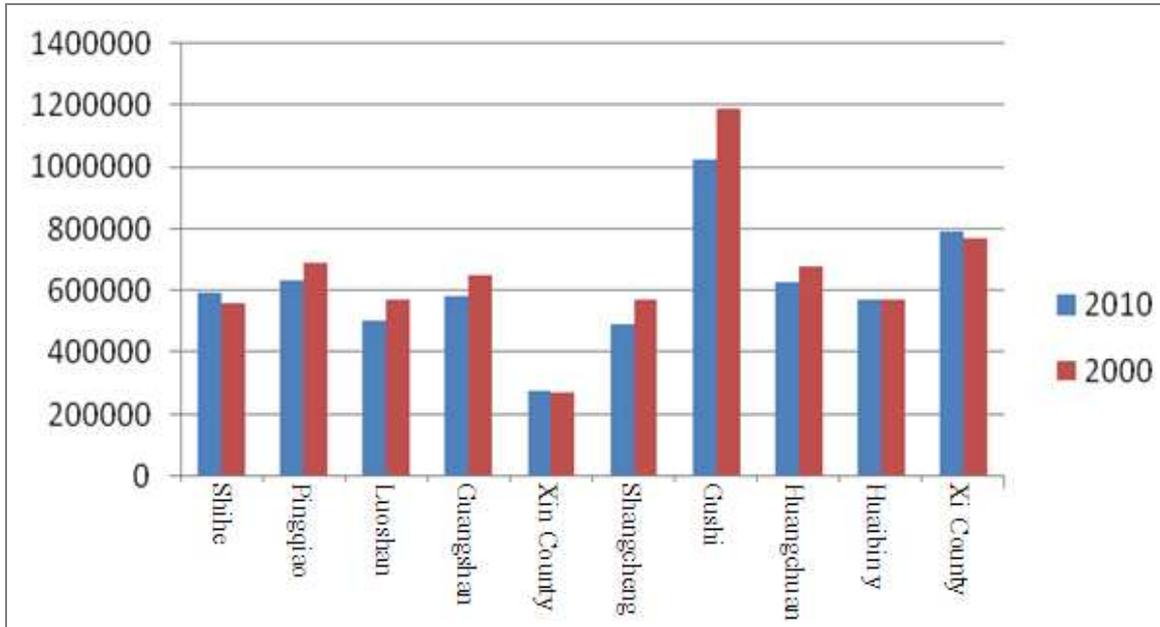


Figure 4: The Residential Population of each area in Xinyang's Jurisdiction
Data Source: 2000,2010 Census of Xinyang City

Prefecture-level Xinyang City possesses two districts and 8 counties. The situations of population distribution of these districts and counties are alike. Most districts and counties has occurred absolute loss of residential population. On the contrary of residential population' loss, the urban population of each area had a trend of rapid growth.

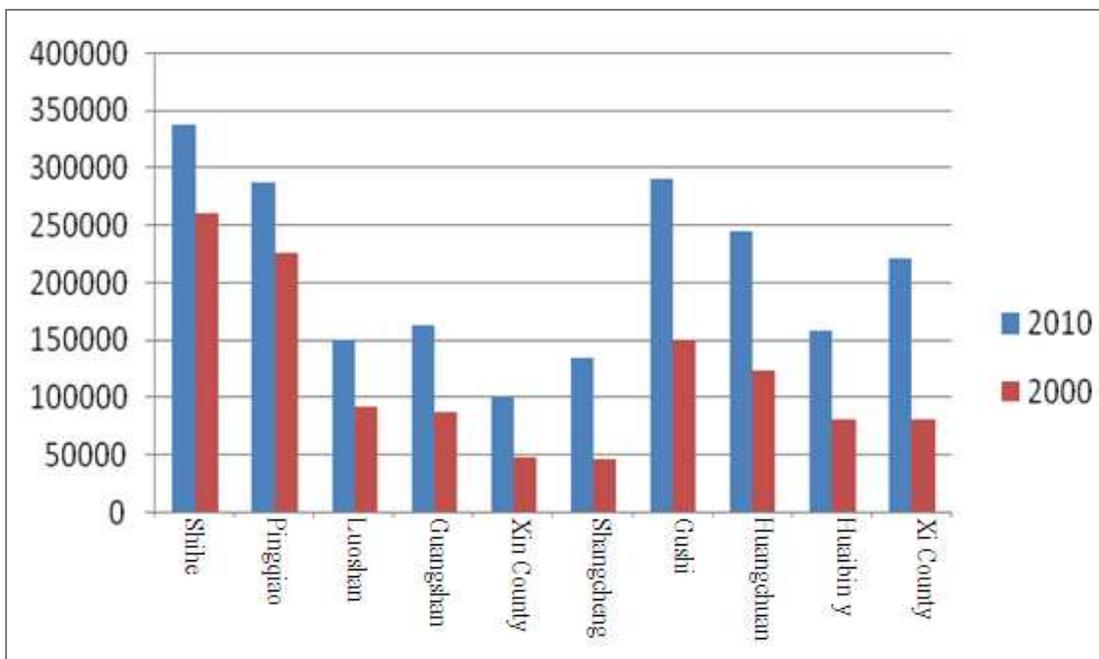


Figure 5: The Urban Population of each area in Xinyang's Jurisdiction
Data Source: 2000,2010Census of Xinyang City

Xinyang is adjacent to Anhui and Hubei province. We can see that the population loss phenomenon in almost the whole surrounding areas in Henan, Anhui, Hubei and Shanxi province with the exception of the capital cities, Zhengzhou, Wuhan, Hefei and Xian city. The aggregation and loss of population in central cities and surrounding areas constitute the spatial pattern of increasing cities and shrinking regions.

Generally speaking, no matter in Sichuan Province or in Xinyang city area, the loss of people includes two aspects: Firstly, the massive emigrating population caused the residential population less compared with registered population. Second, the residential population had the trend of absolutely decreasing.

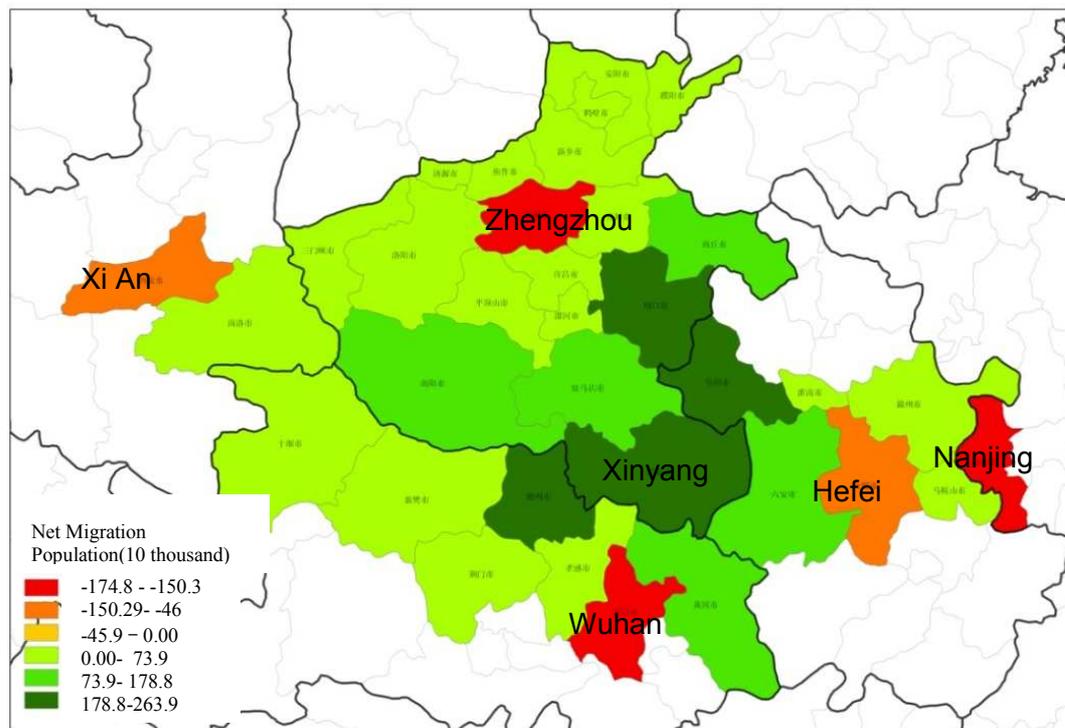


Figure 6: Population Loss and Aggregation Pattern in Xinyang and its Surrounding Areas (2010)
Data Source: 2010 Census of China

3. Population and Economy Analysis of the Shrinking Region

The impact of population migration on the society and economy is an important research topic in the fields of sociology and geography. Domestic academic circles have carried out extensive researches. From the perspective of the impact on the regional development, one view is that the population flow can enlarge the regional economic disparity (Hu 1995, Duan 2005); the other view is that the population flow can narrow the regional economic disparity (Liu 2001, Wang 2001). The above researches are analysis of the whole country using the province as analysis unit. In this article, the view focus on Sichuan Province, analyzing the residential population and the average GDP per person in 2000 and 2010 so as to measure the impact of the population distribution and change trend on the economy and other aspects.

3.1 The Rising Centralization of the Population

For the province with large outflow population, the population flow from the backward areas to the developed areas inside and outside of the province, causing population reconstruction. The Lorenz Curve was prepared according to the census data of 21 cities and regions of Sichuan Province in year 2000 and 2010.

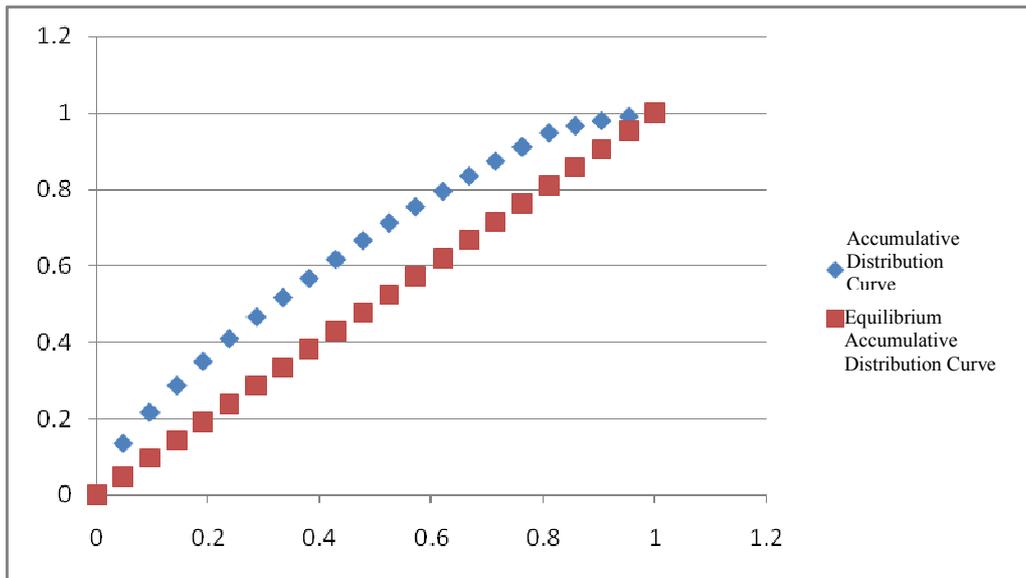


Figure 7: Lorenz Curve of Population Distribution 2000 in Sichuan Province

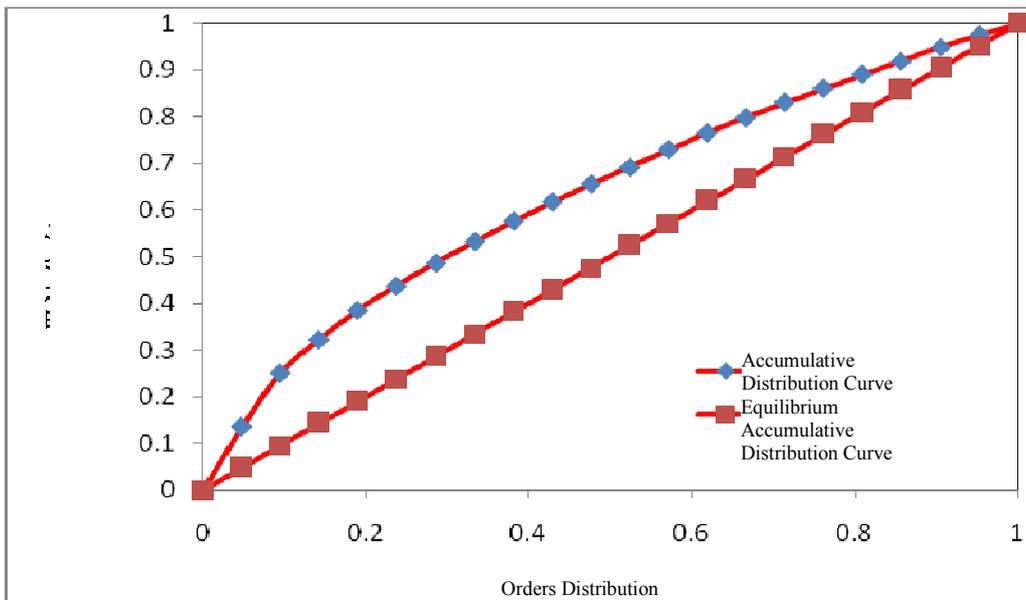


Figure 8: Lorenz Curve of Population Distribution 2010 in Sichuan Province

Using the index of concentration (the equivalent of Gini coefficient based on Lorenz curve) and equilibrium (based on entropy definition of Shannon information), measure the changing trend of population distribution (Chen YG2010). From year 2000 to 2010, the centralization index of Sichuan population increased from 0.298 to 0.327, but the equilibrium coefficient decreased from 0.951 to 0.938. The largest city Chengdu has the population proportion increased from 13.5% to 17.5%. Comparing with the second largest city Nanchong, the population scale of Chengdu rose from 1.66 to 2.24. The population of the province is further concentrating into Chengdu City.

3.2 The Distribution of Economic Growth Level being Even

On the condition of population spatial reconstruction, what happened to the economic growth levels in different cities and regions of Sichuan province? Using the per capita GDP in 2000 and 2010 to draw the Lorenz curve so as to describe the changing trends of the economic growth levels.

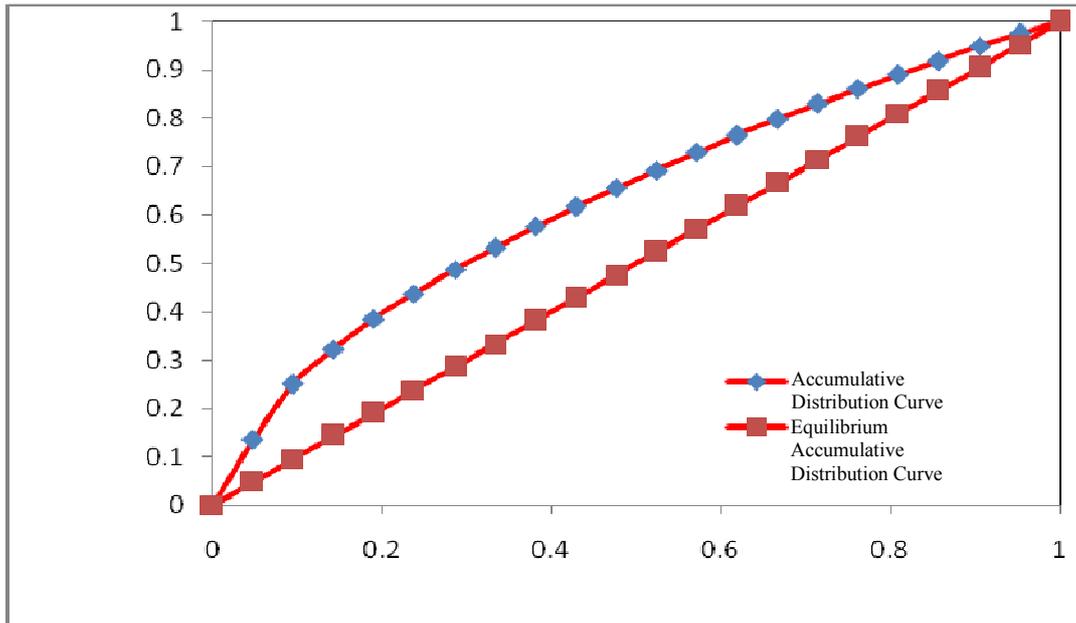


Figure 9: Lorenz Curve of per capita GDP2000 for the Cities and Regions in Sichuan Province

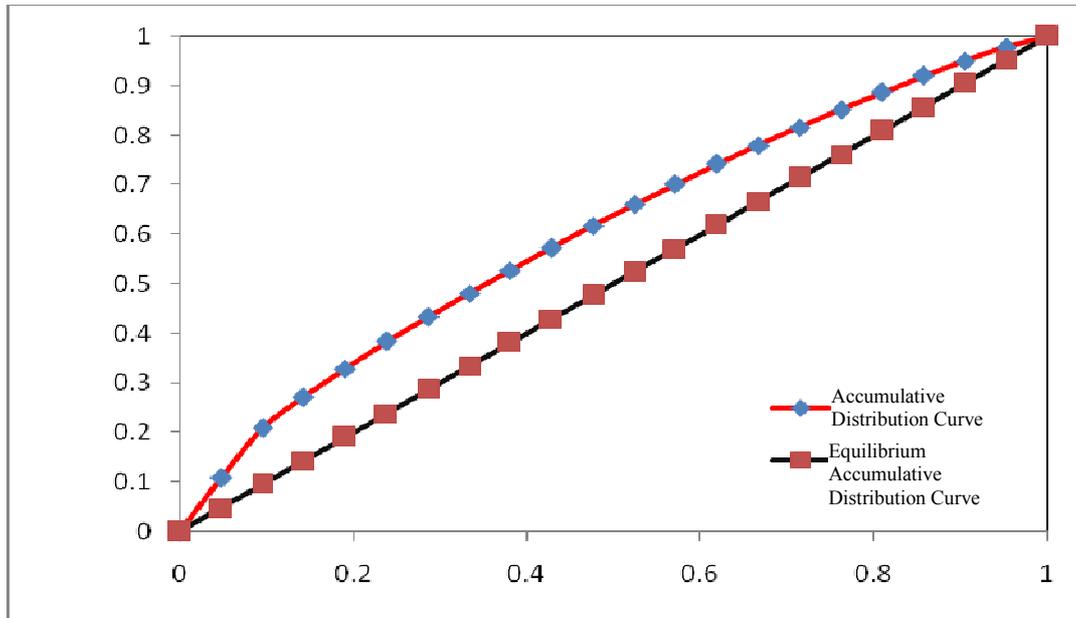


Figure 10: Lorenz Curve of per capita GDP2010 for the Cities and Regions in Sichuan Province

As the above Exhibits shows, the space between the cumulative distribution curve and equilibrium distribution curve of per capita GDP narrowed from 2000 to 2010. The centralized index of per capita GDP decreased from 0.281 to 0.222, the equilibrium increased from 0.956 to 0.973, which showed that the difference of the average output per person has narrowed and the economic growth level in different regions and cities tends to be even.

3.3 Regression Analysis of Population and Economy Distribution

The centralized population and the even distributed per capita income showed that population may flow due to the uneven distribution of the per capita income. Using population absolute growth rate, per capita GDP in 2000 and 2010, the absolute annual growth rate of per capita GDP, relative annual growth rate of GDP, population in 2000 and the unique nature of the city (The provincial capital and minority nationalities area capitals should be represented by “1”, the rest should be represented by “0”) as the dependent variables, carry out the multiple linear regression with SPSS. Only three variables retained which were per

capita GDP in 2000, the unique nature of the city and population in 2000. So the standard regression model is:

$$\text{Population growth rate} = 0.482 * \text{GDP2000} + 0.499 * \text{special city nature} + 0.299 * \text{population2000}$$

It can thus be seen that:

(1) The nature of the city has the greatest impact. The standard regression coefficient is 0.499 and the corresponding partial correlation coefficient is 0.739. The population of Sichuan mostly migrated into the provincial capital city Chengdu, and the minority nationalities are migrating into their respective regional capitals.

(2) The second important factor is the per capita GDP in 2000. The standard regression coefficient is 0.482 and the corresponding partial correlation coefficient is 0.707. Sichuan population has a trend of migration into the city having high in average GDP per person.

(3) The population in 2000 also has some impact. The standard regression coefficient is 0.299 and the corresponding partial correlation coefficient is 0.537. This showed that the area with larger population has more attractiveness to the migration population.

What deserves attention is that the model only reflected the factors that affected the migration of the population in the last ten years in Sichuan Province. The per capita GDP in 2000 affected the migration of the population, but the average GDP per person in 2010 has no obvious impact because the impact of year 2010 can only be showed in the future after year 2010. Provided that the differences of per capita incomes lead to the population migration, what impact does it have on the population migration with the narrowed difference of per capita income, what will happen when the centralization of residential population has risen.

3.4 Emigration's Impact on the Society and Economy of the Shrinking Region

(1) Imbalance of population's age constitution and lack of labor resources

The young male workers are the main part of migrant, and the age and sex structure will get imbalanced after they moved out. Female, Children and the elderly are left behind to form the new population so the dependent ratio gets high and the sex ratio gets low. The young labors are in shortage.

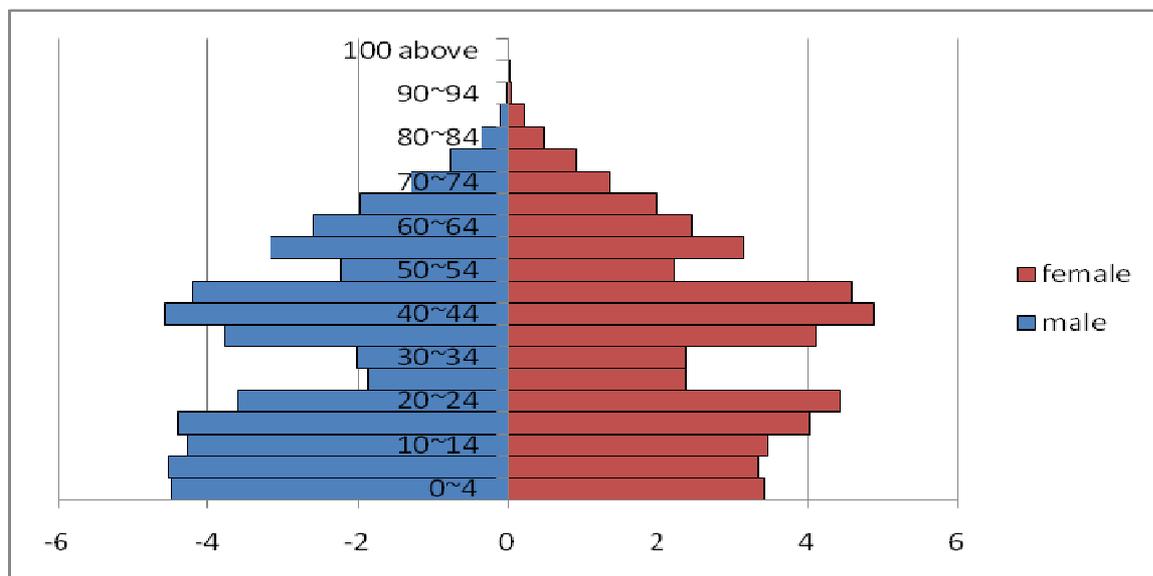


Figure 11: The Age and Sex Structure in Xinyang City (2010)
Data Source: 2010 Census of Xinyang City

According to the 2010 census of Xinyang City, population at the age of 0-14 years old account for 23.51% of the total population, population at the age of 15-64 years old account for 66.96%; and population above the age of 65 years old account for 9.53%. Compared with the national level, the population of Xinyang at the age of 15-64 years old is lower by 7.5%.

The population of Sichuan at the age of 20-34 years old accounts for 19.6% of the total population, while the population at this age stage in the whole country account for 24.4%. The dependency ratio is 49.3% in Xinyang, 38.73% in Sichuan and 34% in the whole country. Large-scale population flow-out leads to sex ratio decline. The sex ratio of Xinyang in 2010 is 100.77, which is lowered by 5% compared with the sex ratio of 2000, and lowered by 4.5% compared with the national average level of 105.2. The sex ratio of the total population of Sichuan is lowered to 103.14 from 106.98 in 2000, and is lower 2% than the national sex ration.

(2) Considerable economic gains and huge social costs

In the process of urbanization, the traditional agricultural society is inevitably transformed into the urban society with the rural population migrates into city and town. However, the rural migrant workers have paid high cost of the society while got better economic condition under the special Household registration system in China.

The moving population would find new jobs out of the rural areas which means the rural labor force can be fully used. With the increase of rural family income, the life of the farmers has been improved and countryside got some new impulse because of funds, technologies, experiences taken back by rural migrant workers(Cai&Bai2006). However, the outflow population causes the rural population aging and the education problem of the left-behind children(National People and Family Plan Committee2012). The talents in the rural migrated and the labor force is in shortage in rural area, which is not conducive to the agricultural modernization. The huge migrated population result in the gradual depression of the rural society(Ma2006). The migrant workers cannot enjoy the equal living conditions of the city residents and the same level of social securities. For the same incomes, they have to pay more social price of family separation, spirit wandering and belonging sense missing.

(3) The negative impact on the economy of population loss area began to appear

Generally speaking, the population migrating from the low income area into the high income area and from the insufficient jobs area into the adequate jobs area is conducive to the overall national economic growth and can maximize the utilization of the human resources. The recent study carried out by Xiaomin Du et al(Du2010) showed that the migrant workers made contribution to the economic growth of the East China, but for the West China, the migration caused mild decrease which means the negative effects of the labor force outflow has began to show up in the local area.

Locateing in the central region of China, Xinyang City is at the beginning of reply to the coastal industry transfer. There are a large number of young migrant workers immigrating out of Xinyang every year, and now the local newly emerging industries face problems of labor force shortage and high cost labor force. The labor force costs 150 yuan per day per person in Xinyang City which is equal to the construction worker cost in Beijing¹. This will increase the cost of the improvement in the developing areas and slow down the economic growth steps.

4. Prospects and Suggestions

4.1 Prospects of China's Population Migration Pattern

China is now in an important transition period of social and economic development. The export-oriented economy of the coastal areas is being affected by the international economic crisis, and the industrial development has a trend to move from the coastal areas over to the inland areas, which will guide a new population migration pattern.

Shown in Chinese Migrant Workers Monitoring and investigating Report 2012, the rural migrant workers working in the East China account for 64.7% of the total amount in 2012, which is lowered by 0.7% than last year; the migrant workers working in the Mid China account for 17.9%, which is increased by 0.7% than last year; the migrant workers working in the West China account for 17.1%, which is increased by 0.4% than last year. The migrant workers working in the Pearl River Delta and Yangtze River Delta respectively account for 23.1% and 20.1% of the total amount, respectively lowered by 0.9% and 0.8% than last year. Along with the rapid growth of mid and west China, The incomes of the rural migrant workers

in different areas tend to be equal. The attractiveness of Pearl River Delta and Yangtze River Delta to the migrant workers is in gradual decline.

The migration population of Xinyang area is 930,000 in 2000, and reaches 2 million in 2005 and 2.36 million in 2007. And after 2007, the migration situation became steady without increasing and the rapid growth trend of population outflow(Xinyang City Human resources and Social Security Bureau & Xinyang City Migrant Workers Office 2012). “Affected by the economy environment this year, the main strategy of our company has been adjusted from “Stable, Healthy and Developing” to “Stable and Healthy”, “Developing” is no longer the company’s goal”, citing a Beijing construction project leader who is in charge of organizing migrant workers from Xinyang.

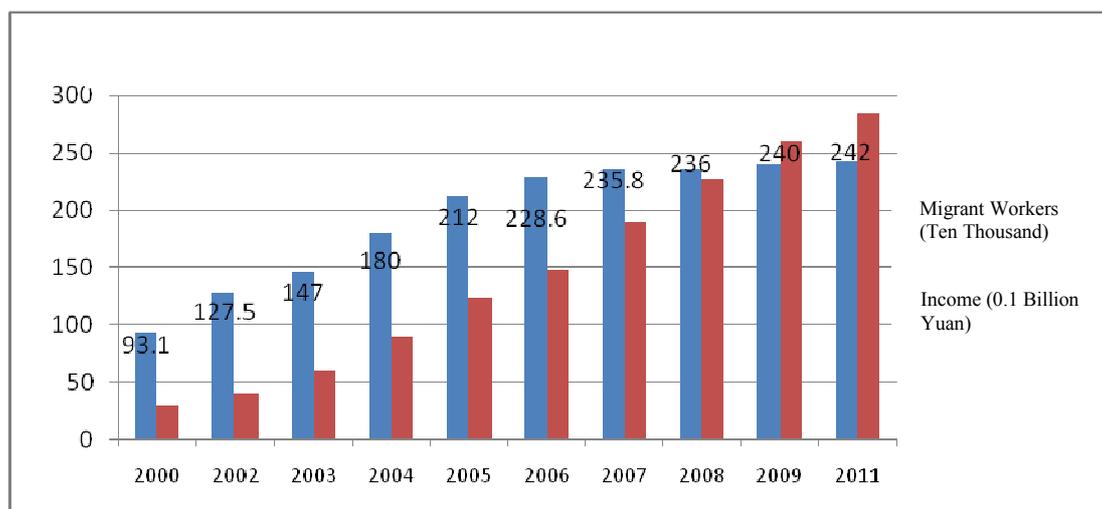


Figure 12: Migrant Workers Amount and Income Status From 2000 to 2011 of Xinyang City

Shown from the questionnaire survey to Xinyang migrant workers in construction and food service industries in Beijing, return to the local county town in Xinyang was the main direction of the rural migrant workers in the future. More workers prefer to stay in Xinyang if the same working opportunities are provided.

It is predictable that the massive migration workers' pattern in China will be changed along with the adjustment of the Chinese industrial distribution and the economic growth focus moving westward. The rural migrant workers growing older will return to their native areas and join into the construction of the local city and town. The newly increased migrant workers will mainly search jobs near their home town and get used to the new life of nearby cities or towns, where can realize the unification of the real urbanization with local citizen identity.

4.2 Suggestions for the Coming Migration in Urbanization

(1) Encouraging the migrant population flow back

The local government should realize the significance of human resources to the long-term development of local economy. They'd better encourage the migrant population flow back instead of encouraging the export of the labor sources. Then the rural migrant workers can realize their urban dream in nearby cities and towns instead of being the “amphibians person”(Qin2008) between rural and urban.

(2) Implementing of spatial equilibrium strategy

In the past, un-equilibrium strategy was dominant in the regional development and regional planning(Li2009), which leads to the migrates concentrated into capital cities, centre cities and large cities, causing increased housing price, resources shortage, traffic congestion and a series of urban diseases. According to the questionnaire of the migrant workers, the main direction of the rural migrant workers return is the county towns/cities. These towns/cities both have the advantages of low costs and perfect social networks. To cope with this return trend, the relatively balanced spatial development strategy should be adopted. Multiple centers' development strategy should be encouraged more that single center development strategy in the urban and regional planning.

(3) Strengthening the industrial development in urbanization

Industry development is the driving force of the urbanization. In the past ten years, the urbanization focused too much on the real estates and the infrastructure construction, and the industries development was neglected. The job opportunities and the income disparity are the primary reasons that attract the migrant workers. To draw the rural migrate workers back, the local government should change their focus on the development of real economy to create more job in cities and towns, which is the strategy of “keep urbanization and industrialization interact together”(Hu JT2012).

(4) Accelerating the step of City System Reform

The last strategy is to accelerate the city administrative system reform, change the city management system from the top to the bottom. Through this system reform, the local cities can make their own decision for their development without the intervention of higher cities for their own interests. Specifically, the reform include the system of city leading counties, opening the system of county changing to city etc. When grass-roots city development rights are respected and most county towns improved the living condition, the moving people can go back to their home town and stay forever.

5. Conclusion

The massive migration from countryside to city helped China to become an urban country in an amazing speed. However, there are more than 0.22 billion rural migrant workers moving between cities and countryside which leads to not only the inadequate urbanization of China but also the reconstruction of population.

Migrant directions included both the movement from countryside to nearby cities and the movement from countryside to long-distance cities. Most of the out-flow areas faced the loss of residential population while the local city/town still in growth. So the phenomenon of increasing cities and shrinking regions lies in different scales of county, prefecture-level city and province in Chinese West-Middle regions.

Mathematic analysis of population and economy in population loss area shows the centralization of the population has risen, while the distribution of per capita income tends to be even. The factors of the city nature, per capita GDP in 2000, population in 2000 have great impact to population growth rate of different areas.

Migration's impacts on the population loss areas are complex. While achieving the economic gains to rural family and area, the social costs of emigration seems higher and longer. And the negative impacts on the economy of the population loss area begin to appear.

China is facing the transition of social and economic development which will lead to the change of migration pattern. The massive and long distance flowing will be gradually replaced by the nearby migration. Local cities/towns will be the main settling place of rural migrant workers.

Finally some suggestions are given to cope with the coming migration in urbanization, such as encouraging to draw back the migrant population, implementation of spatial equilibrium strategy, strengthening the industrial development, and acceleration the step of the city system reform, etc.

Endnotes:

1Acquired by the author from the social investigation to the migrant worker of the Xinyang City

References:

Caifang&Bai Nansheng(2006),*Labor Migration in Transition China*,Social Sciences Academic Press,Beijing.

Chen Shengzhong(2010), *The Achievement of Western Development in 10 Years*, Newscenter of China.com, Viewed 8 July 2010,

<http://www.china.com.cn/economic/zhuanti/xbkf/node_7082168.htm>.

Chen Yanguang(2010), *Mathematical Data Analysis for Geography Based on Excel*, Science Publishing House,Beijing.

- Du Xiaomin & Jianbao Cheng(2010), *The empirical analysis of the impact of the population migration on the local economy*, Population Studies,2010(3):77-88
- Duan Pingzhong & Chuanjiang Liu(2005),*The Impact of Population Flow on the Area Economic Growth*, China Soft Science, 2005 (12) : 99-110.
- Hu Angang(1995),*China Region Disparity Report*, Liaoning People's publishing House, 88-92,Shenyang.
- Hu Jintao(2012),*The Report of 18th National Congress of the Communist Party of China*, Viewed 8 November 2012.<<http://www.ryedu.net/syy/hyyy/201211/29000.html>>.
- Hu Shuli(2012), *China was in the Process of "Inadequate Urbanization"*, Financial News:New Century, Viewed 20 September 2012, <<http://www.topnews9.com/html/2012/0920/13231.html>>.
- Li Yining(2009),*Unbalanced Chinese economy*, Encyclopaedia of China Publishing House, Beijing
- Liu Qiang(2001), *China Economic Growth Convergence Analysis*, Economic Research,2001(6):36-45.
- Ma Jinlong(2006), *The impact of population outflow on the regional economic development and the countermeasures*, Academic Ideas Exchange, 2006(2):103-106.
- National Bureau of Statistics of China(1999),*China population statistical Yearbook 1999*, China Statistics Press,Beijing.
- National Bureau of Statistics of China(2011),*China's population and employment statistical Yearbook 2011*, China Statistics Press, Beijing.
- National Bureau of Statistics of China (2012a),*China Statistical Yearbook 2012*,China Statistics Press, Beijing.
- National Bureau of Statistics of China(2012b), *Chinese Migrant Workers Monitoring and Investigating Report of 2011*,Viewed 27 April 2012, <http://www.stats.gov.cn/tjfx/fxbg/t20120427_402801903.htm >
- National People and Family Plan Committee (2012),*2012 Report on China's Migrant Population Development*, China Population Publishing House,Beijing.
- Office of the Population Census of Xinyang City (2002), *Tabulation on the 2010 Population Census of Henan Province, Xinyang City*, Henan people's Publishing House, Zhengzhou.
- Qin Hui(2008), *Don't Let Rural Workers Being amphibians person*, Southern Metropolis Daily, Viewed 13 April 2008,<http://news.ifeng.com/opinion/200804/0413_23_488640_2.shtml>
- Tang Maohua(2009),*Study of China's inadequate urbanization*, Economic Science Press, Beijing.
- The Census Office of the State Council&National Statistics Bureau(2002),*Tabulation of The 2010 Population Census of the People's Republic of China*, China Statistics Press, Beijing.
- The Census Office of the State Council&National Statistics Bureau(2012),*Tabulation of The 2010 Population Census of the People's Republic of China*, China Statistics Press, Beijing.
- The Office of the Population Census & Bureau of Statistics of Sichuan Province (2002), *Tabulation on the 2000 Population Census of Sichuan Province*, China Statistics Press, Beijing.
- The Office of the Population Census & Bureau of Statistics of Sichuan Province (2012), *Tabulation on the 2010 Population Census of Sichuan Province*, China Statistics Press, Beijing.
- Wang Xiaolu,&Pan Gang(2001), *China Regional Disparity: 20 Years Changes Trend and Impact Factors*, Economic Science Press, Beijing.
- Xinyang City Bureau of Statistics & Office of the Population Census of Xinyang City (2012), *Tabulation on the 2010 Population Census of Xinyang City*, China Statistics Press, Beijing.
- Xinyang City Human resources and Social Security Bureau & Xinyang City Migrant Workers Office(2012), *Xinyang Labor Force Economy2012*, Internal Material.

Research on the Migrant Personnel Flow's Influence on the Urban Planning: in the Case Study of Beijing and Xinyang City

ZHOU Yajie*¹, WANG Tinglin¹

1. China Academy of Urban Planning and Design, Beijing 100044, China;

*To whom correspondence should be addressed. E-mail: zyjflora@hotmail.com

1. The Phenomenon of Migrant and Returning Home at the Stage of Rapid Urbanization in China

China is at the stage of rapid urbanization. Large number of people from the rural area in the West is moving to relatively developed urban region in the East, especially to metropolitans such as Beijing and Shanghai. In the year 1975, China surpassed the US and became the country with the largest number of urban population; this situation is predicted to persist for a long time. Joseph E. Stiglitz, a Nobel laureate in Economics, claims China's urbanization, together with the Third Industrial Revolution, are the two events that shaped human development in the most profound manner in the past century.

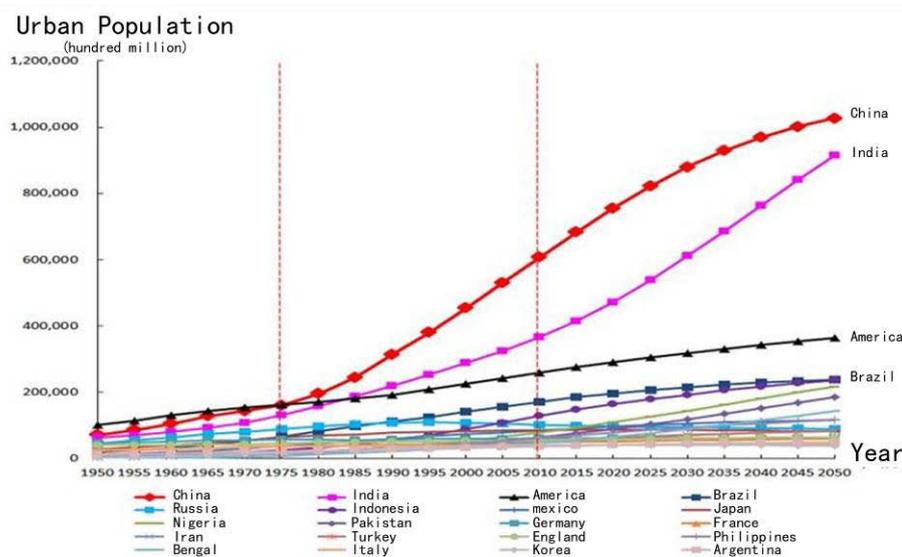


Figure 1: Top 20 Countries with the Largest Number of Urban Population: Population Changes by Year

Source: United Nations, 2010, *World Urbanization Prospects: The 2009 Revision*

The 2008 Global Financial Crisis led to the unemployment of 20 million migrant workers as well as pushed the structure change of urban economy. Traditional industries in the coastal region is moving to a saturated states, therefore economy of these cities requires structure changes. At the same time, the Middle and the West faces new opportunities because of the growing domestic market. With economic opportunities dispersing from the East to the Middle and the West, migration workers are moving back to where they are from. This trend brings significant influences to both their hometowns and their destinations. It is crucial for the destination cities to have sufficient housing, medical and education services to prevent social segregation and other social problems. The home cities also need to develop their infrastructure to cater for the returning migrant workers.

2. Brief Introduction of the Migrant Population of Beijing and Xinyang

Beijing is one of the biggest gathering place for migrant workers in China. By the end of 2012, Beijing's resident population is 20.69 million, of which the foreign resident population is 7.74 million, more than one-third of the resident population. Furthermore, in the foreign resident population, the migrant workers account for 84.4%. In recent years, Beijing's foreign population growth has become a major factor in the resident population growth. During the period of 2001-2012, the foreign resident population in Beijing has increased 5.11 million, an average annual increase of 465000 people, with an annual growth rate of 10.39 percent, far higher than the average annual growth rate of 3.72 percent of the resident population during 2001-2012. The proportion of Foreign population in the resident population has increased from 19.0% in 2001 to 37.4% in 2012, which means that in 2001 one out of five resident population is foreign population, while in 2012 to become one in three.

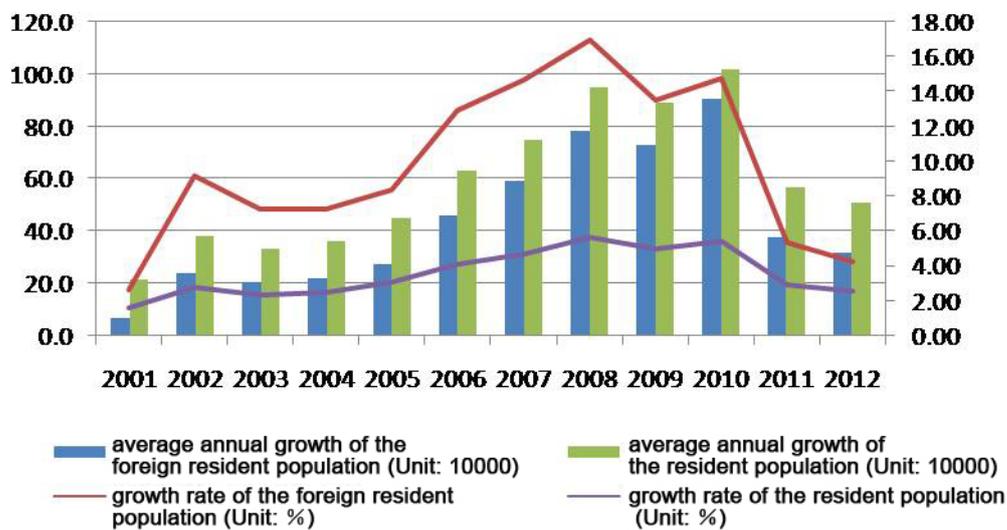


Figure 2: The Trends of the Foreign Resident Population and the Resident Population In Beijing

Source: the Project of Capital Regional Spatial Development Strategy

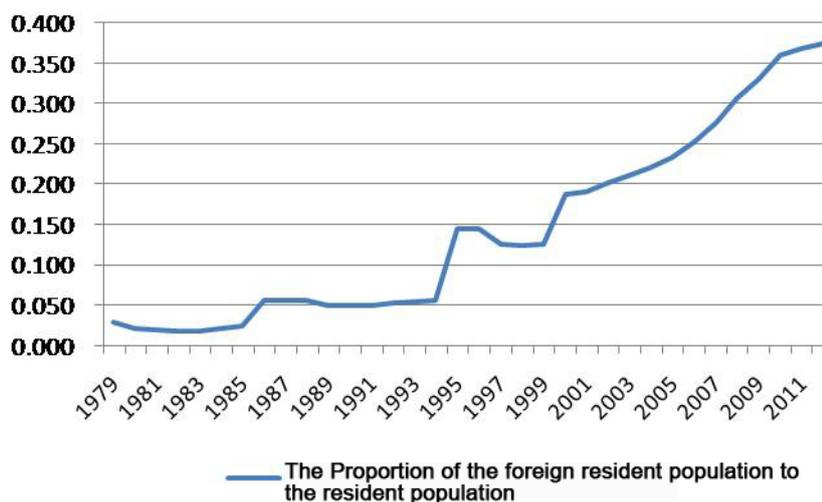


Figure 3: The Proportion of the Foreign Resident Population to the Resident Population In Beijing

Source: the Project of Capital Regional Spatial Development Strategy

Henan Province is a large labor-exporting province in China, and Xinyang is a large labor-exporting city in Henan. In fact, labor economy has become a prominent feature of Xinyang. From the year of 1990, the outflow population in Xinyang has gradually increased, especially after 2000, the outflow population growing from 1,170,000 in 2000 to 2,400,000 in 2010. The migrant workers from Xinyang mainly flow to the eastern developed regions, especially megacities such as Beijing and Shanghai. For Beijing, Hebei and Henan are the largest source of migrant population, and the migrant population from the city of Zhangjiakou and Xinyang respectively ranks first in these two provinces in Beijing.

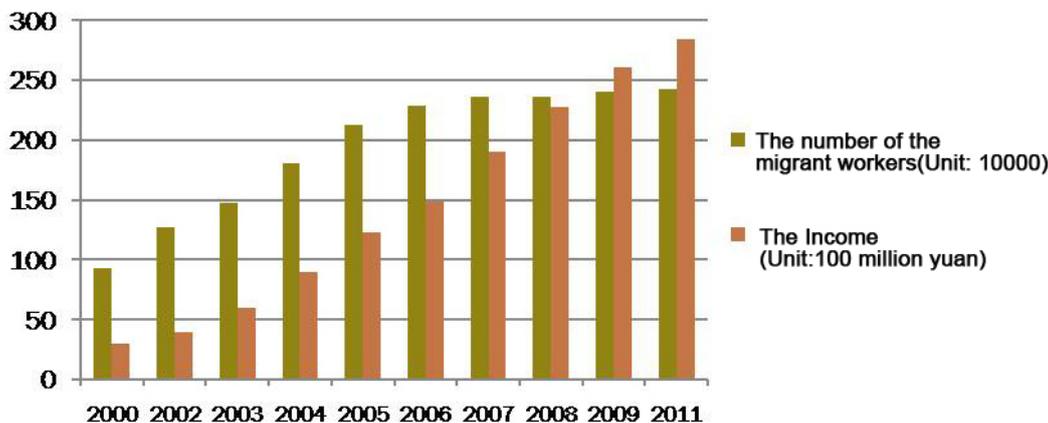


Figure 4: The Number of the Migrant Workers of Xinyang and The Migrant Workers' Income

Source: the Project of the Master Plan of Xinyang City

In a word, Beijing and Xinyang are respectively typical labor import and export cities. Beijing is one of the important destinations of Xinyang's outflow population, and the population from Xinyang also accounts for a large population in Beijing's migrant population. The author has participated in the Assessment of the Master Plan of Beijing City project (2011) and the Beijing 2049 research project (2010), and now is compiling both the Projects of Capital Regional Spatial Development Strategy and the Master Plan of Xinyang City. So, on the basis of the above projects, this paper takes Beijing and Xinyang as the research object, to study the migrant personnel flow's impact on urban planning.

3. Research Method

The research steps are as follows. Firstly, the author sent out questionnaires to the Xinyang migrant workers in Beijing to investigate their working and living conditions and their willingness of returning home. Secondly, the author did statistical analysis of retrieved questionnaires, and analyzed the living space of migrant workers both in Beijing and in Xinyang using GIS software, to find out the characteristics and problems of the spatial distribution.

In July 2013, we had a discussion with migrant workers from Xinyang who work in Beijing, and conducted a week-long survey. At last, a total of 100 valid questionnaires were collected. The respondents contain construction workers, restaurant waiters, engineering staff and other industry practitioners.

4. The Working and Living Situation of the Migrant Workers From Xinyang In Beijing

4.1 Statistical Analysis of the Questionnaire

Through statistical analysis of the questionnaire, we have a certain understanding of the migrant workers' working and living situation in Beijing.

According to survey statistics, respondents with college education and above accounted for only 25%, the majority of migrant workers belong to the low educational attainment. For the purpose of coming to Beijing, 80% of respondents indicated their purpose is to increase revenue and improve their living conditions, and they certainly achieved their purpose. But at the same time, asked if Xinyang and Beijing have the same job and income if they would choose out of work, more than 2/3 of people said they would not. Although compared in Xinyang, respondents' income has increased, but in fact, respondents monthly income is still below the average wage in Beijing (2012 Beijing's average monthly wage is 5,223 yuan). Half of the respondents monthly income is between 3000-5000 yuan, and more than 3/4 of respondents monthly income is below 5,000 yuan.

As to the status of marriage and children, 72.5% of respondents are married and have children, and 2/3 of married migrant workers' spouses and children live in Xinyang. It shows that the majority of migrant workers are separated with their families, which is caused by a variety of causes. Firstly, most of jobs offered for migrant workers in Beijing are manufacturing workers and construction workers, and these industries need more male employees, and less female. Secondly, migrant workers' children to school in Beijing is quite difficult and costly. In addition, the cost of living for a family in Beijing is far higher than a person. We had a further investigation of the respondents with the spouse and children in Beijing, and found that their children have chosen Beijing's general schools and key school, but not schools specially for the migrant workers' children. In response to our surprise, the respondents indicated that the quality of education in schools specially for the children of migrant workers is much lower than Beijing's general schools, not to mention the key schools, and the respondents who brought their children to Beijing from Xinyang have relatively high income levels, so they would rather spend more sponsorship fee to send their children to the general and key school.

In the living space distribution, the respondents mostly live in the regions between the Fifth Ring Road and Sixth Ring Road or in the suburban counties close to the center city in Beijing. In the choice of the type of housing, more respondents live in sheds, dormitories provided by the company or rental units in city villages. Most of the living conditions of migrant workers are very poor, such as the construction workers. Eight people live in a 10 square meter room, and the fan, the air conditioning and other facilities are not allowed to be installed.

In the entertainment and leisure activities, 40 percent of respondents said no leisure activities, and in the remaining 60% of the respondents, more than half would rather play cards with colleague or read books and go net surfing at home, only 10 percent of the respondents said they would go to parks, museums, cinemas, theaters, fitness facilities and other entertainment facilities. For most of the migrant workers, Beijing's leisure and entertainment consumption is too high, and most of the facilities are concentrated in the central city, for the migrant workers living in urban fringe areas too far away.

Asked about the difficulties of working and living in Beijing, the most common answers are the high property prices, high rent and serious air pollution, followed by lower income and costly medical care. Overall, Xinyang migrant workers in Beijing face with high living cost of the city, but get less income than the average of Beijing. They live in the urban fringe, difficult to integrate Beijing's colorful urban life, but also to endure the pain of separation with their families.

4.2 Spatial Analysis

To learn more about Beijing's migrant workers spatial distribution and accessibility of public facilities, we use spatial analysis for further study.

Capital Regional Spatial Development Strategy, the project the authors are participating in, has done spatial analysis on the proportion of the migrant population in different regions of Beijing, which shows that most of the migrant people live in the regions between the Fifth Ring Road and Sixth Ring Road, followed by the regions between the Fourth Ring Road and Fifth Ring Road and the suburban areas outside but close to the Sixth Ring Road, which is approximately consistent with the results of the questionnaire survey.

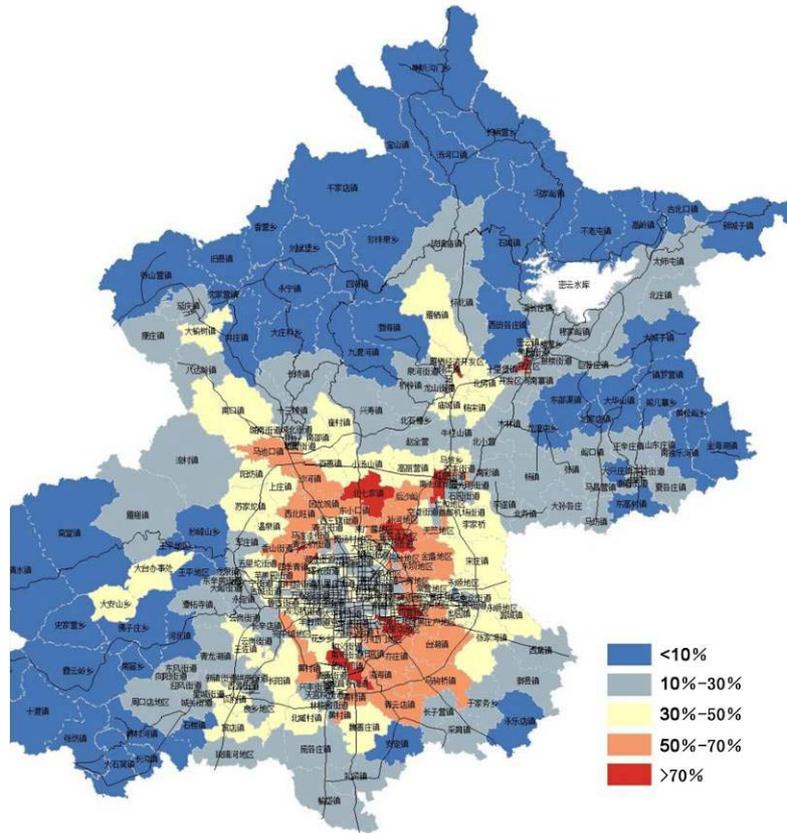


Figure 5: The Proportion of the Foreign Resident Population to the Resident Population

Source: the Project of Capital Regional Spatial Development Strategy

In order to study the accessibility of public facilities of different circle layer regions in Beijing, we selected a typical sector region, surrounding Beijing Metro First Line and Ba-tong Line within the Sixth Ring Road in the east area of the city as the study region. We took residential quarters (including city villages) as the basic research unit, the samples from the website- the Beijing Real Estate Transaction Management Network (www.bjfdc.gov.cn), and city villages from the Google map. We divided the residential quarters for different groups, including villas, highest-price commercial housing, high-price commercial housing, low-price commercial housing, lowest-price commercial housing, affordable housing, old housing before housing reform, the traditional courtyard houses, city villages, etc. Then we drew a figure of residential spatial distribution. In the public service facilities, we selected metro, primary school, hospital, business and park as the study object and drew figures of the distribution of the public facilities. Next, with the help of the method of shortest distance of ArcGIS, we calculated the average shortest distance to the public service facilities for each housing group. The smaller the shortest distance values, the more accessible the public services are. The results find out that the accessibility of public service facilities from the city center to the edge shows gradually decreasing feature. Therefore, the accessible of public service facilities in the urban fringe areas where most migrant workers live is relatively poor.

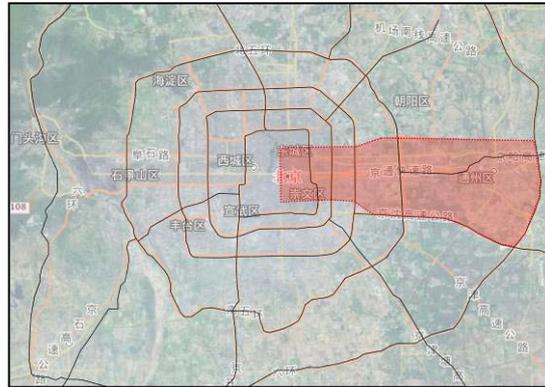


Figure 6: The Study Region

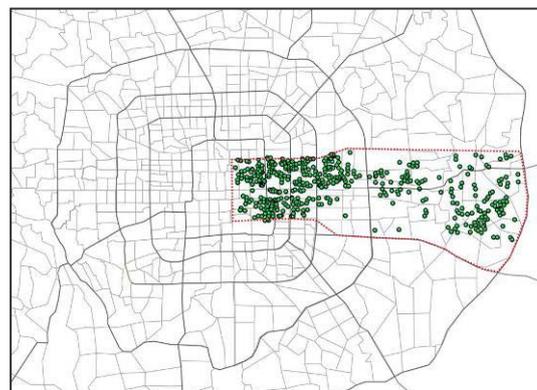


Figure 7: Spatial Distribution of the Sample Residential Quarters



Figure 8: Spatial Distribution of the Public Service Facilities

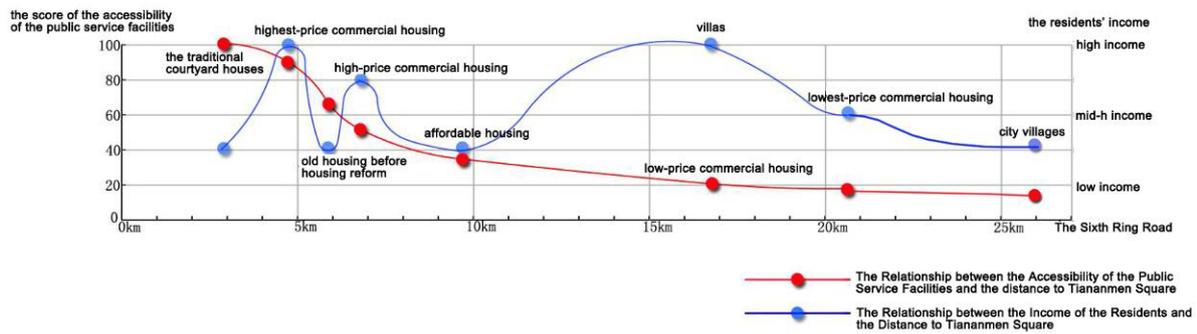


Figure 9: The Accessibility of the Public Service Facilities and the Income of the Residents of Different Groups

5. The Migrant Workers' Wishes, Trends and Motivation of Returning Home

The main purpose of the migrant workers working in the big city is to improve the income and improve their lives. 69% of peasant-workers go into the big city(Beijing) from Xinyang city in order to increase income and improve their living, according to the results of questionnaire survey. If there are the same income in Xinyang city, 68% peasant-workers won't choose to go out as a migrant worker. Also some migrant workers (20%) of Xinyang is the purpose of learning ability, opening field of vision, looking for better development. Small percentage of rural migrant workers (9%) is for the purpose that his family and himself live in the city and become city people, for the realization of urbanization.

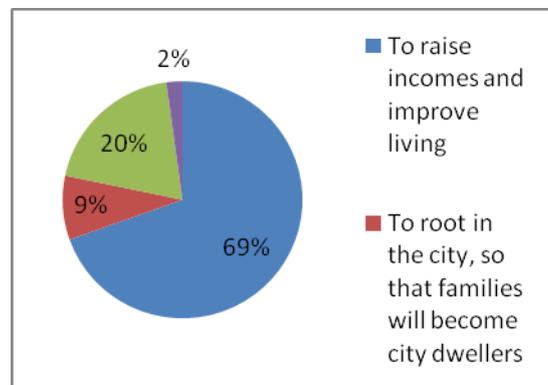


Figure 10: The purpose of migrant

The willingness of the migrant workers went back to hometown is strong, and the trend is obvious. Through the questionnaire survey, we found that 87.5% of migrant workers plan to leave Beijing, only 12.5% of the migrant workers plan to take root in Beijing. Migrant workers more tend to choose back to small city center or back to the villages and towns, after they leave the big cities. Questionnaire survey results showed that 46% of migrant workers will go back to Xinyang city center, 26.8% of people choose to return to villages, 14% back to the county towns, and a few people choose going to other urban development. Survey results reflect that at present most of the migrant worker plan to leave big cities, back home in the small and medium-sized cities and towns.

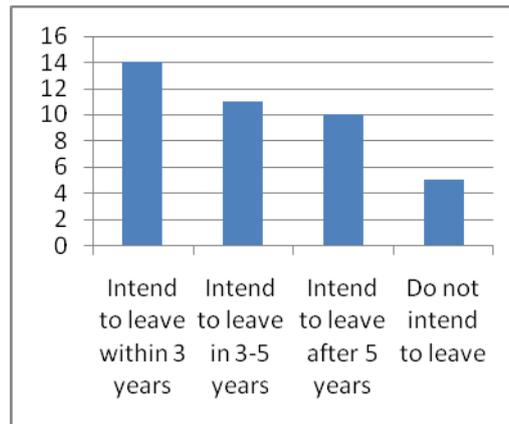


Figure 11: When would you leave Beijing

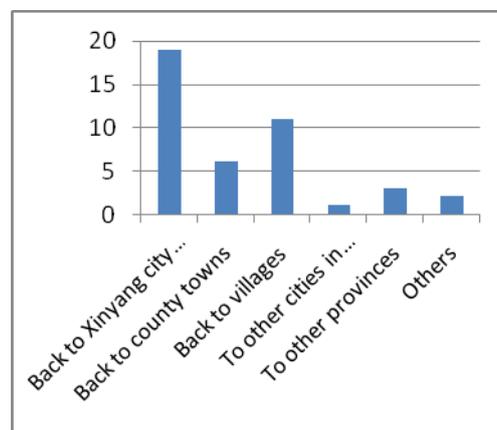


Figure 12: Where will you go after you leave Beijing

The impetuses of migrant workers returning home are that migrant workers are unable to reunite with their family. China's urbanization process is largely driven by the young rural migrant labor force. Because the cost of living in cities is higher, workers often work alone into the city, his family members are left behind in rural areas. Migrant workers flow between urban and rural areas, in a state of "migratory birds" which is used to describe half of urbanization. Left-behind in rural areas is "386199" (women, children and the elderly), so there is a lot of problems. Through questionnaire investigation, we found that main problems of rural migrant workers face are that they cannot be united with their families and that their children and old people can't get good care. The primary reason of migrant workers return home is want to reunite with my family (45.4%), followed by the good environment and little pollution in Xinyang(20%).

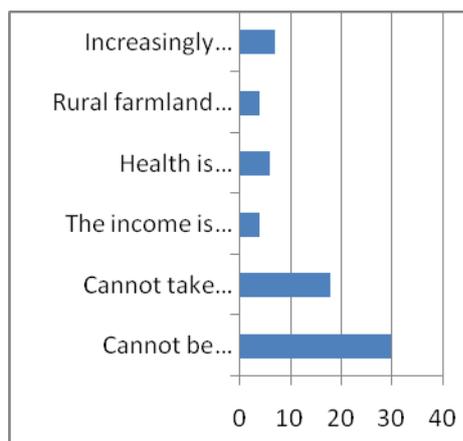


Figure 13: the main problem of migrant workers

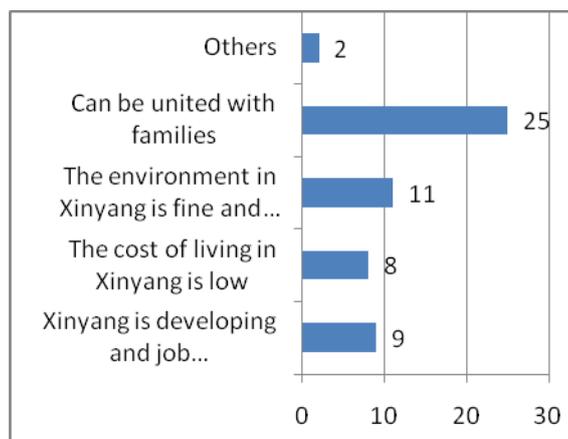


Figure 14: The reason back to Xinyang City

6. Conclusions and Suggestions

6.1 The Trend of Returning Home

Through the above analysis, we know that the main reason for the migrant is to improve income. Most of the migrant workers are planning to return home and work in their hometown in a few years. Migrant workers generally are plagued by apart with family for a long time. Area like Xinyang that people are going outside should provide a better working and living environment to attract migrants returned to census register area. China's urbanization has experienced 30 years of development, and the governments gradually change mind force from attaches great importance to the speed of urbanization to pay attention to the quality of urbanization. Under the new background, "migratory birds" urbanization is unsustainable. On one hand, migrant workers cannot enjoy the city, and are separated from their family, on the other hand it brings overpopulation problems in big cities. Migrant workers are stable employment and settlement in small or middle cities and towns is the trend of the times.

6.2 Suggestions for Beijing

Firstly, migrant workers need relatively low-cost, decent living space and basic living requirements. Beginning in 2009, Beijing began to implement the policy that migrant workers can apply for public rental housing residence. Public rental housing income limits for a single person is not more than 2000 yuan monthly, and for a family is not more than 3000 monthly. But for most of the migrant workers, whose monthly income is 3000-5000 yuan, they are not content to the income limits, but it's also expensive to rent ordinary housing for them, so they choose the city villages or the basement. Beijing should further refine the affordable housing policy, for different types, different income groups to develop multi-level affordable housing policy, to solve the housing problems of the sandwich layer. In addition, to alleviate the growing problem of residential segregation, we recommend introducing the living mode of

"big mixed with small settlements" which some scholars have proposed. We believe that this mode can not only better alleviate Residential Segregation, but also adapt to market mechanisms, and has a strong operability, either. This mode requires inhabited land planning to achieve mix of residential area, which means that in the the city and community level, the residential areas avoid over-concentration of homogeneous populations, while in the residential quarters and neighborhood level, the quarters maintain homogeneity, both for easily neighborhood development and construction, and the establishment of a sense of belonging and identity.

Secondly, as to the education problem of the migrant workers' children, although there have been a number of schools for migrant workers' children in Beijing, but most schools' teacher quality and hardware environment are much lower compared with the general schools in Beijing. Even if there are a few schools with better conditions, but some of them are also facing policy limitations and shortage of funds. As large population from Xinyang in Beijing, there are several schools run by people from Xinyang, such as Jingyuchen Shool, which has relatively much better conditions than other schools for migrant workers' children, and has been identified as "Beijing Private School Specialty building" project pilot schools by the Beijing Municipal Education Commission in 2007. But this school still faces a serious problem of insufficient funding, and the situation of the teachers's income equal to the restaurant waiters' leads to serious teacher job-hopping phenomenon. Beijing should strengthen the implementation of the support and relief policies for the schools for the migrant workers' children, or try to make the general schools or key schools open campus or affiliated class for migrant workers' children to solve their children's schooling. In addition, with the evacuation of the functions of city center, Beijing should further implement the equalization of public services.

In addition to the concern for basic needs of life, but also we should concern about the cultural and spirit demand of the migrant workers, to provide welfare or low cost entertainment space for them. Such as for construction workers, construction site can regularly show movies or provide the creation space such as chess room, video halls and so on.

6.3 Suggestions for Xinyang

Xinyang should create conditions (employment environment, living environment, public services, infrastructure, etc.) to attract migrant workers to return home, to provide a good environment for them.

Most people would give top priority to the beautiful landscape environment as the advantages of Xinyang, which is the most mportant factor that attracting people to go back home for development. Therefore, urban planning and landscape construction of Xinyang should put environment protecting on the first place. About half of the respondents chose economic and industrial development as the most needed improvement area, so we can conclude that backward economic is the biggest factor to cause the outflow. Followed by nearly 1/4 of the respondents chose public service facilities construction and ecological environment construction and parkland as the most needed improvement area. Therefore, in the future urban development of Xinyang, we should protect the beautiful Landscape first, and seek a development path which is harmony with the natural. And we also should strengthenthe construction of medical, education and other public service facilities.

For the choice of living space, more than half of respondents wished they can purchase their own housing in Xinyang urban district, especially in Yangshan Area which is in rapid expansion recent years. This shows that most Xinyang migrant workers prefer to live in urban district with good public service facilities. On the choice of housing types, each with about 40% of the respondents selected multi-storey buildings and high-rise buildings. The residential land planning shoud provide diverse housing to meet the needs of different groups.

References:

Yaohui Zhao(1999). Leaving the Countryside: Rural-to-Urban Migration Decisions in China, The American Economic Review, Vol. 89, No. 2, May .

Kevin Honglin ZHANG, Shunfeng SONGb(2003), Rural–urban migration and urbanization in China: Evidence from time-series and cross-section analyses, China Economic Review, Vol. 14, No. 4.

Meng, Xin, Junsen Zhang(2001), The Two-Tier Labor Market in Urban China: Occupational Segregation and Wage Differentials between Urban Residents and Rural Migrants in Shanghai, Journal of Comparative Economics, Vol. 29, No. 3, Sep.

Chul- Woung Kim, Sang- Yi Lee and Seong- Chul Hong(2005). Equity in Utilization of Cancer Inpatient Services by Income Classes. Health Policy, Vol. 72.

Nicholls S(2001). Measuring the Accessibility and Equity of Public Parks: A Case Study Using GIS. Managing Leisure, No.6.

Issues and solutions on the development of suburban towns in Shanghai from the view of migration and social structure transition

(Development of Suburban Towns in Shanghai: Migration and Social Structure Transition)

Jin Zhu, Department of Urban Planning, Tongji University, China
Jie Zhang, Shanghai Tongji Urban Planning & Design Institute, China
Su Xu, Department of Urban Planning, Tongji University, China

1. Introduction

Regional differences in economic development always drive the expansion of human migration activity. China is witnessing a large-scale population migration since the 1990s, as the migration control policies are gradually adjusted and eased. According to Report on China's Migrant Population Development in 2012, every year about 200 million people flow back and forth between the towns and villages periodically in the last five years. Large-scale migration exerts a remarkable influence on both the output areas and input areas. Shanghai is the economic center of China and the central city of the Yangtze River Delta city region, which plays an important role in the global economy. During the past decades, Shanghai has been undertaking the role of regional population input area.

The rapid increase in the population of Shanghai is mainly characterized by two features in the 2000-2010 decade. Firstly, population growth occurred mainly in the outskirts of Shanghai, especially in developed suburban cities, like Jiading, Minhang and Songjiang District. The population inflow rate of these three districts is over 150% (Figure 1). The notable growth of population is mainly contributed by migrants. In 2010, the population of people from other provinces has increased to 8977 thousand, increasing 193.6% compared with the amount in 2000. This rapid growth trend began in the late 1990s, while the population growth of natives over the same period was relatively stable (Figure 2). According to the latest statistics from the end of 2012, migrant population has increased to 9602.4 thousand, accounting for 40.3% of the whole residential population. Among them, more than 70% are rural workers.

With intense growth of the population in Shanghai as well as the lacking of construction land in the central city in the late 1990s, Shanghai has learned from the concepts and practices of new towns abroad. The urban system of Shanghai consists of one central city, 9 suburban cities (including Jiading) and 60 suburban towns according to the comprehensive plan revised in 2006, namely "1-9-6-6" system. The government hopes to strengthen the suburban cities and towns to evacuate the over-crowded population in the central city. But comparing to the foreign new town, most of the suburban cities and towns founded on the base of former counties or townships have long histories, absolutely not "new".

Both the local farmers' migration from villages to towns or suburban city and the migration of people from other provinces have produced a profound impact on the development of suburban towns and the spatial structure of suburban city as well. As an important component of the whole urban system of Shanghai, the urbanization process and urban development issues of suburban towns deserve some attention. This paper selected one of the suburban cities, Jiading city, as a case of empirical research. Several towns and villages within jurisdiction were discussed. The first part introduced the theoretical framework and analysis methods of this study. The second part was the detailed empirical study. The situation of migration and social structure were introduced first, and then we analyzed the issues of suburban towns in urbanization, public services, social governance, rural landscape, etc. The mechanism of these issues was discussed later. And the third part put forward some solutions to these issues and then drew the final conclusion.

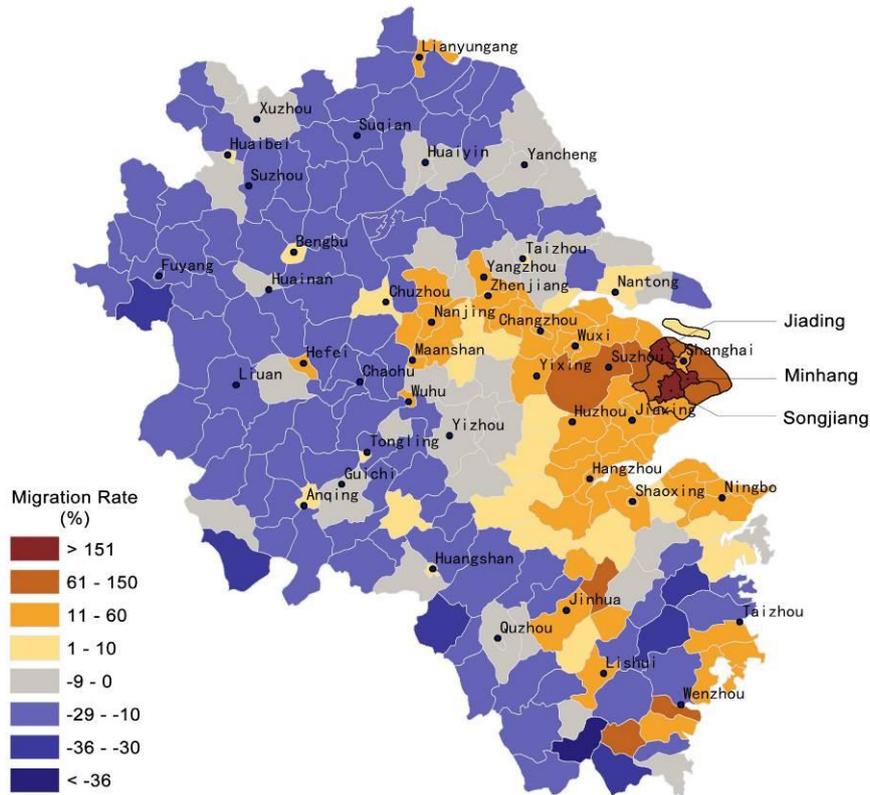


Figure 1: Shanghai, Jiangsu, Zhejiang and Anhui region's population migration (2010)

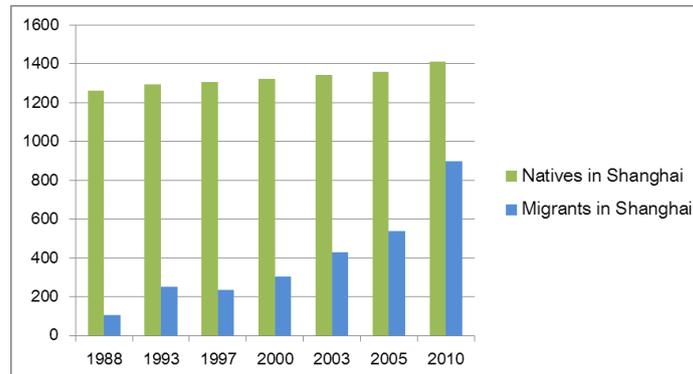


Figure 2: population growth of natives and migrants in Shanghai since 1988

2. Research method

2.1 Theoretical framework

Based on the classic migration law proposed by Ravenstein in 1885, the rural-to-urban migration is realized step by step. Farmers near the city move to the city first, so the rural area around the city becomes a vacancy, which makes it possible that rural population from remote areas can fill this vacancy. Through this process, the attraction of cities gradually spread to the edge of the city. The natives move out and the former living space become a "demographic vacancy zone" to attract new migrants. This is the first population "two-way flow" model.

This model will be expanded and used to explain the internal and external migration in suburban cities of Shanghai (Figure 3). Internal migration is presented by "Village - Town - City" progressive migration, namely the local residents can purchase real estate in towns and cities to achieve the "village - town", "village - city" and "town - city" residence changes. In recent years, great efforts have been made to develop high-quality public

service facilities and real estates in suburban city, leading to a rapid population growth there. And the suburban cities have been absorbing the population from the suburban towns, rural area and even the core city of Shanghai. So local farmers generally tend to choose "village – City" migration, rather than "village - town" migration. Meanwhile, because of the potential bonuses of holding rural household registration, those who have been living and working in cities still hold rural household and they tend to stay in the cities on weekdays and enjoy their holidays in rural area.

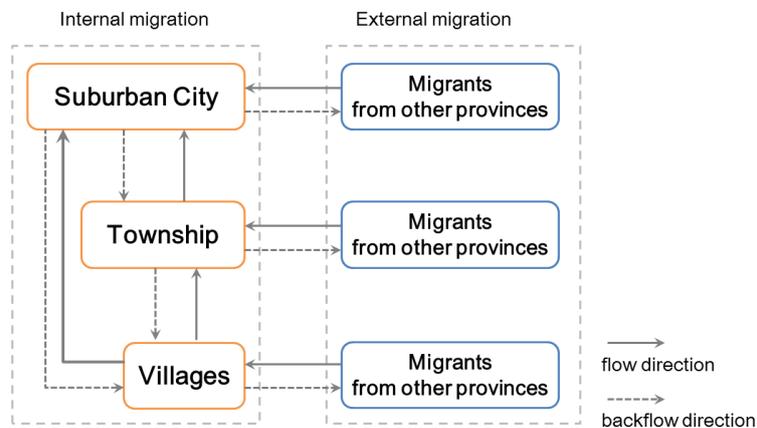


Figure 3: population "two-way flow" model

Many migrants from other provinces came to Shanghai to earn a better life, forming the external migration. Suburban towns' industrial development provides more jobs and attracts substantial population inflows. In addition to employment opportunities, the cost of living is also a vital factor considered by these migrants. Suburban towns and villages become the first choice for them to sojourn in because of migrants' low income and the low cost of living in towns and villages. "Vacancy zone" has also provided the living space for the migrants coming from other provinces. Rental housing in the villages produces mutual benefit between local farmers and migrants. The "two-way flow" migration had resulted in the dramatic changes in social structure, influencing the social and economic development. We try to analyze and interpret the issues of suburban towns from this perspective.

2.2 Case selection and analysis method

Jiading city which owns a profound history of nearly 800 years, is selected as a case study. Jiading County was set up in the Southern Song Dynasty (AD 1217). In 1958, Jiading became a county of Shanghai from Jiangsu Province through the adjustment of administrative division by State Council. In 1992, Jiading became a suburban district of Shanghai. Today, the administrative area of Jiading includes 7 towns (Anting, Malu, Nanxiang, Jiangqiao, Xuhang, Waigang, Huating), 3 street committees (Jiading, Xinchenglu and Zhenxin), Jiading Industrial Park and Juyuan New Area (Figure 4), consists of 126 neighborhood committees, 147 village committees, 2034 villages. Jiading city is positioned as an important node city within Yangtze River Delta. "1 core + 2 clusters" are the key constructing area of Jiading city. "1 core" means the center part of the city, including Jiading and Xinchenglu Street Committees, Jiading Industrial Park (southern part), Malu town and Juyuan New Area. "2 clusters" are Anting cluster, and Nanxiang Jiangqiao cluster.

The relevant census data and statistical yearbooks were used in macro-level analysis, while micro-level research was mainly conducted through field surveys of the township and village and interviews with residents.

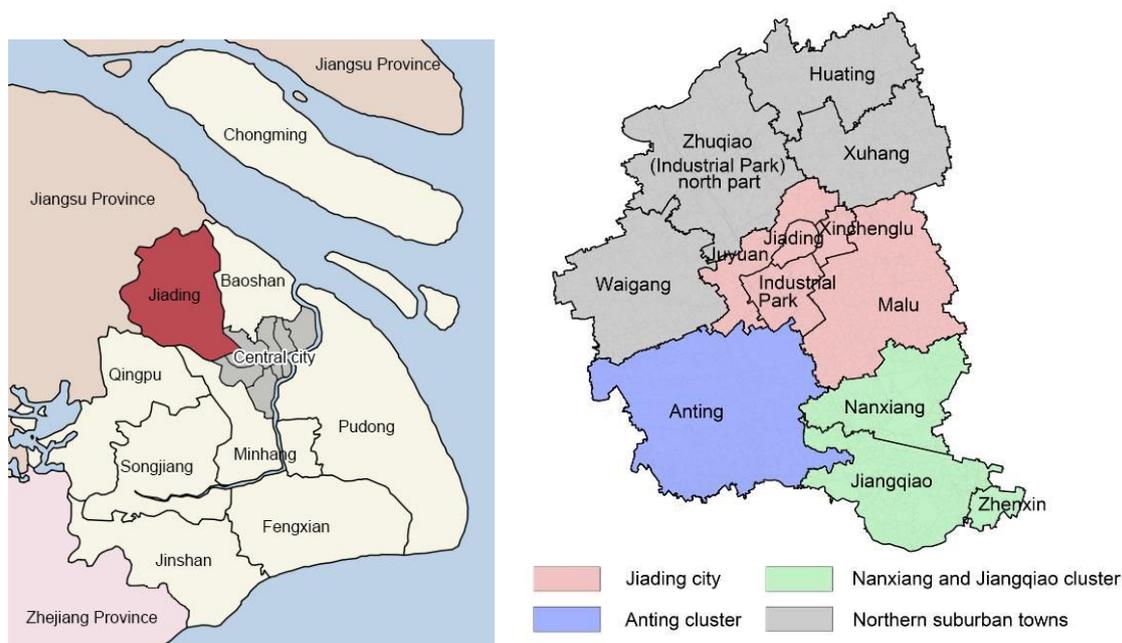


Figure 4: the location and internal administrative division of Jiading city

3. Case Study

3.1 Population migration and social structure transition in Jiading city in recent years

Before 1990s, the scale of internal migration in Shanghai is relatively stable because of the strict policy constraints. People who move from village to towns and suburban city achieve their identity transformation mainly through marriage, schooling and other means. With the rapid economic and social development after the reform and opening, especially after the housing system reform in 1990s, rural people can purchase the urban real estate to become new citizens. Driven by the early welfare differences between the rural and urban household registration, such behaviors increased. In the past 10 years, the development of real estate in Jiading city has made it possible for rural people to settle in city. As the social welfare gap between the rural and urban household registration has been gradually reduced and the bonus of the rural identity appears, many rural people choose to retain the rural household registration. They may live and work in cities, but they will never change their identities and abandon what they own in their original villages including the farmland and house site, etc. On the other hand, with the expansion of downtown area of Jiading and the construction of suburban towns' industrial parks, a lot of village land were transformed into urban construction land. Many farmers passively moved to Jiading city, and the household registration and employment were transformed correspondingly.

In addition to the internal migration, the external migration continues to grow with the rapid economic development in Jiading, especially the boom of manufacture. According to the latest demographic census, 1471 thousand people live in Jiading in 2010, among which 828 thousand are from other provinces. The amount of migrants is far beyond the natives. In 2000, only 162 thousand migrants live in Jiading. 89% of these migrants come from rural area in other provinces. In terms of the age structure, most of the migrants are of prime-working-age, slowing the aging process in this region (Figure 5). Most of these migrants are of low-level education, 77% of the population are uneducated or just have finished their primary school or junior middle school education. Migrants who have got bachelor degree or above account for only 2.84% (Figure 6). In addition, the vast majority of migrant workers distribute in manufacturing, construction, retail and wholesale trade, accommodation and catering industry and other low-end industries.

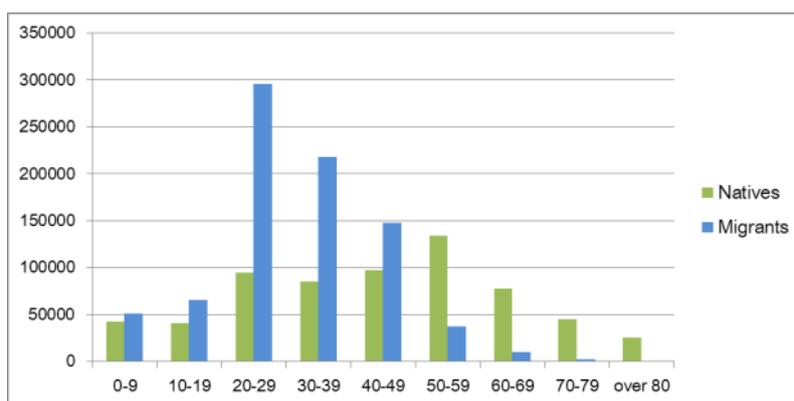


Figure 5: the comparison of age structures of natives and migrants in Jiading

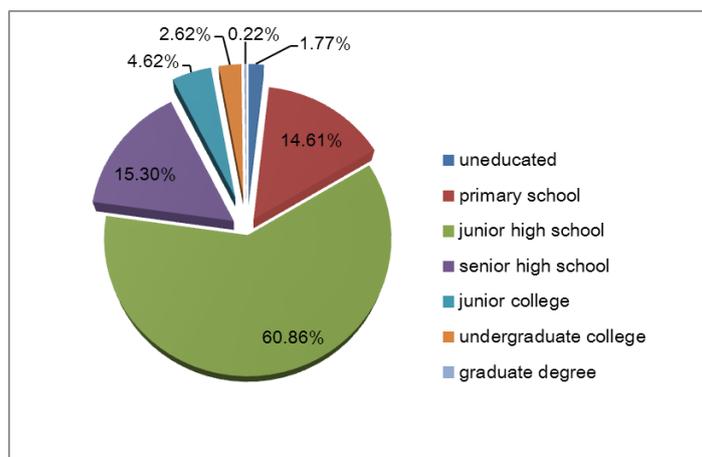


Figure 6: the foreign resident population level of education

Jiading District was listed as an important industrial, scientific and technological satellite suburban city by Shanghai government in 1958, which laid its early industrial foundation. Since reform and opening, the accelerated economic development, especially in the manufacturing industry, attracted a large amount of migrant workers. So the migration dynamic is industry-driven. Since 2000, Jiading becomes a key suburban comprehension city in order to evacuate the dense population of Shanghai central city. Urban construction and public service facilities are also highly valued in addition to industrial development, so living quality and city scape have been greatly improved. Migrants come to Jiading not only to make more money but also to enjoy the good public services. So the migration dynamic is both industry-driven and welfare-driven while the local rural people’s migration is driven mainly by high-quality welfare in Jiading city.

3.2 Issues of the development of suburban towns

Migrants from other provinces have become the majority of inhabitants of Jiading in the past 10years. In terms of quantity, they are the "protagonist" of the city. These young labor force have made significant contribution to the economy development of Jiading, providing a primitive of capital accumulation and making up for the local insufficient labor supply. In this process, a lot of problems have emerged in suburban towns. Many industrial zones which are just in the administrative area of suburban towns attract a lot of migrants. Most of the migrant workers live in villages nearby, not being able to enjoy the urban life. The place they live in and that they work in are totally different. Driven by the different level of public services provided by Jiading city and suburban towns, the local people in rural area are eager to have good public services in Jiading city, which further expanding the imbalance between supply and demand of public service facilities. The great increase of migrants also bring burdens to the social governance of suburban towns and villages, the intersection of natives and migrants sparked a lot of social contradictions. Since both the local

population and migrants are not of the "Entire Migration", the social structure of rural area is not stable and the autonomous capacity of villages decreases. The physical environment of rural areas features a sharp decay. These problems will be discussed in detail hereinafter.

3.2.1 Urbanization lags behind economy development

The industry of Jiading is scattered in each suburban town. The economic growth is mainly driven by secondary industry rather than agriculture in each town. As can be seen from the above-scale industrial output value (Table 1), the suburban towns have solid foundation for industry development. Since the GDP of each administrative unit has not been published, above-scale industrial output value and agricultural output value are used to characterize the industrial strength. The industrial output value of suburban towns is not low. Especially the industry strength of Zhuqiao town where Jiading Industrial Park (north part) is located leads the city's townships.

Spatial unit	Administrative unit	Above-scale industrial output value	Agricultural output value
Jiading city	Jiading	260244	0
	Xinchenglu	5214	0
	Juyuan	312239	1159
	Malu	4356024	7609
Anting cluster	Anting	8230165	8830
Nanxiang and Jiangqiao cluster	Nanxiang	1681236	1746
	Jiangqiao	1823061	3277
	Zhenxin	3134	0
Suburban towns	Xuhang	1474829	21582
	Zhuqiao	6391473	31095
	Waigang	1322556	28765
	Huating	602879	25122

Table 1: industrial output value and agricultural output value in 2012 (10 thousand yuan)

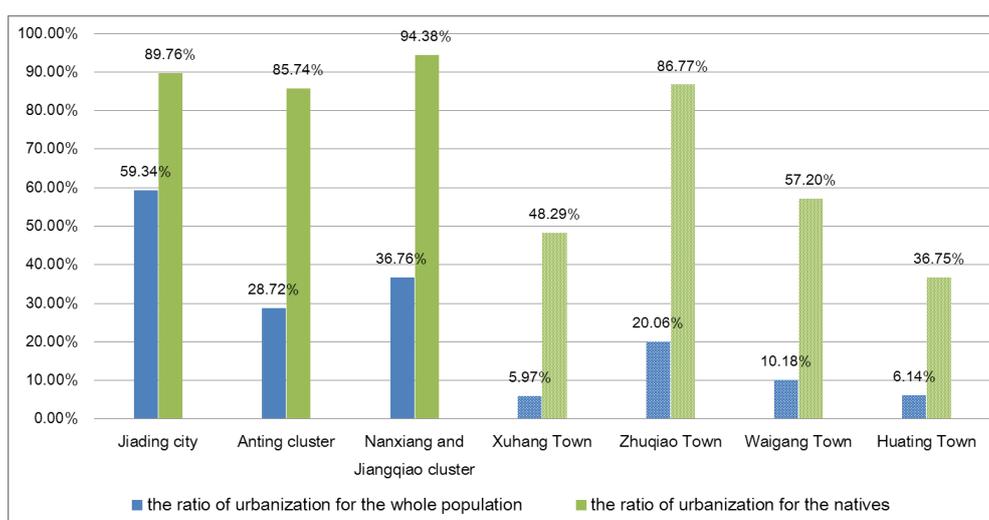


Figure 7: the ratio of urbanization for the whole population and for the natives

Despite the high level of economic development, the level of urbanization in suburban towns is relatively far below that in Jiading city (Figure 7). People who live in

rural area are considered rural population by the statistical department. So those migrant who work in town and live in villages are counted in rural population, resulting in a relatively low rate of urbanization. Through the ratio of urbanization for the natives, we can easily infer that most migrant workers live in rural areas of suburban towns (Figure 7).

Most of these migrants do not work in agriculture, but in the industrial park, so the urbanization rate is underrated. But it's also not appropriate to count these typical "semi-urbanization population" in urban population. Limited by their income level, most of them choose to live in poor-quality but cheap rental housing in villages (Figure 8). These houses are lack of separate bathrooms. Migrants live tough lives in the Chinese style "slums".



Figure 8: the rental housing in rural area of suburban towns

In addition, the industrial parks and suburban towns are split in space and function, lacking of good connection. Public services and commercial facilities are not sufficient in industrial parks, which give birth to a lot of spontaneous informal market to provide catering, retail and other commercial services for industrial workers. Because of the lack of updates and maintenance, the space quality of townships is just declining. The inadequacy of support systems and lack of updated power have restricted the healthy development of suburban towns.

3.2.2 Low level of public service provision in suburban towns

Over a long period of time, the public service provision levels are similar in each town and the spatial layout is flat. The educational, medical facilities covers the whole administrative area of suburban towns, and people can get long time education from kindergarten to high school education and basic health care services. Since 2000, along with the public service facilities construction in Jiading city, public service facilities show a polarization trend. The supply capacity of public service facilities in towns gradually weakens, while the public services supply level of Jiading city continues to strengthen. New high-quality schools and hospitals were set up in Jiading city. By 2012, Jiading No.1 Senior High School is the only key high school in Jiading defined by the Shanghai education department. From the composition of students enrolled in 2010, namely where they had their junior high school education, we can see most of the students came from Jiading city, Anting cluster and Nanxiang and Jiangqiao cluster. Very little students had their junior high school education in Xuhang, Zhuqiao, Waigang and Huating town (Figure 9).

The sharp difference stems from the agglomeration of high-quality education resources (both in hardware and software) in Jiading city. The education quality in suburban towns cannot be compared to that in Jiading city in terms of teachers, hardware and other aspects. Another factor can't be ignored is that migrants students who do not own local household registration are not allowed to participate in the entrance examination in Shanghai. In recent years, the migrant students account for a large proportion in primary and junior middle schools in towns. For example, over 60% of the students in Loutang primary school located in Zhuqiao Town are children of migrant workers. The natives are reluctant to send their children to these schools full of migrant children for the quantity of local students in these

towns' public school is limited. Though these public schools have already enrolled many migrant children, it cannot meet the needs of all school-age migrant children. So 14 private primary school were set up for these migrant children to receive basic education.

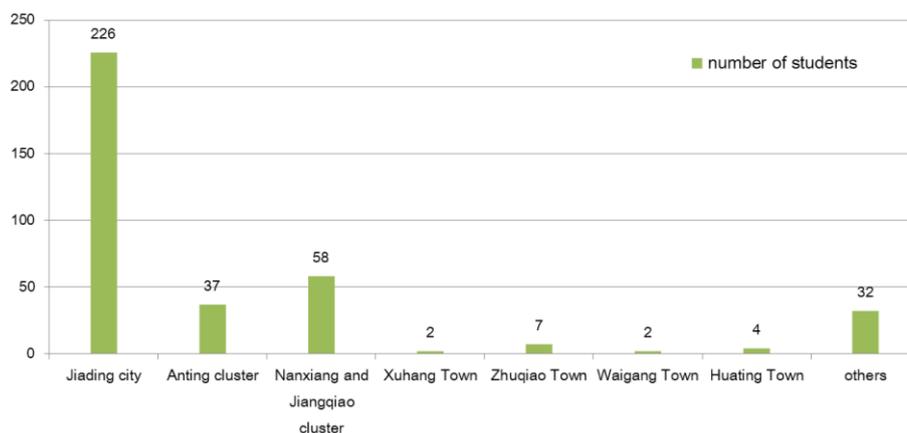


Figure 9: composition of students enrolled in 2010 by Jiading No.1 Senior High School

The expanding gap of the public service quality between Jiading city and suburban towns is becoming a key drive for the natives to purchase housing in Jiading city to let their children receive high-quality education. In this process, the social segregation thus forms.

3.2.3 The arise of social conflicts increase the burdens on social governance costs

Massive floating population increases the difficulty of social governance, directly bringing great pressure on public security, city management, etc. Social security has aroused public concern because immigration crime has become an important restrictive factor to the social development. According to the data by Jiading Prosecutor's Office, among all the accepted crime cases, 84.8% of them were immigration crime in 2007. This proportion continues to enlarge in recent years (Cheng and Wang, 2009). Although the number of migrants who conduct crimes is very small, it has greatly disturbed the social order and affected people's sense of security. Despite the explosive growth of floating population, the corresponding growth of the number of administrative staff seems very inadequate. Taking the police as example, there are 1,400 policemen in 2000, and in 2005 the number reached 1,500. While at the same time, the floating population has increased from 26 million people in 2000 to 52 million in 2005, an increase of 100%, increasing the police department's workload and difficulty.

In the micro-level rural surveys, social conflicts and security has become a topic of great concern to local villagers. Pan Village (Figure 10), located in Zhuqiao Town, is an example to reveal the problems of rural area in suburban town. There are currently 26 families, including 56 natives living in the village. According to the village leader, around 158 migrants rent housing to live in the village. The migrant population has greatly exceeded the local population. About 10 years ago, there were only a dozen migrants here.



Figure 10: the layout of Pan Village

The local interviewees said they were concerned about the security condition and they had to frequently check whether they had locked the door. To prevent theft, cash and valuables are not safe to put in home. In Chinese traditional countryside, people don't need to close the doors at night because people are familiar with each other, namely "acquaintance society". But such state has ceased to exist after the inflow of migrants. The conflicts between landlords and tenants often emerge due to some trivial matters. Some crimes conducted by migrants did happen in the past few years. The migrants are discriminated in villages. Some of the migrant interviewees said that once the landlord or other villagers lost some belongings, the migrants were always under suspicion. The innocent migrants are therefore "stigmatized", and they think it's unfair, but helpless. The massive influx of migrants as well as the young people moving out from villages have brought great change to the social structure, and the original "acquaintance society" is broken, which reduces autonomy ability of villages.

3.2.4 The physical environment of rural areas features a sharp decay

The social structure is totally changed in some major holidays, like the Spring Festival. In these days, 80% of the migrants will go back home and stay around one month. At the same time, people who have the ability to move out of the village will also return to spend New Year with family relatives. Therefore, the social structure shows a seasonal replacement process. Migration also affects the rural character and physical environment. On one hand, those young and capable people have moved out or just return on holidays, the self-renewal ability of the rural area is diminished. The rural housings were mainly built in the 1980s to the 1990s, so most of the housing has been very dilapidated. Furthermore, driven by the temptation to rent, the local villagers try to build more cottages on the ground or transform the first floor of their main house to provide more rental housings. We found that every household had built several rental housings in the past decade. Each house has the average of 5 rooms to rent, and few families even have as many as up to 20 rooms (Figure 11). Since the existence of market demand and interests, this phenomenon is difficult to forbid. The Government is also very clear that migrant workers cannot rent such low-cost housing in the formal market. If the government dismantle these illegal buildings rigidly, it will not only stimulate the conflicts between local farmers and government but also affect the industry development of Jiading city. However, profit-seeking behavior of individuals has brought in the overall decline of physical space in rural area. On the other hand, the rental housing is just a temporary residence for the migrant workers. The lack of local identity will not restrain their misconduct to the physical environment, like littering, spitting, etc.



Figure 11: inner space of rental housing in rural area

With the gradual increase of migrant workers, the potential market demand is gradually emerging. Some migrants start to operate grocery stores, providing basic commodities for the residents around (Figure 12). During the investigation, we found that these grocery consumer groups showing a significant geographical features, namely people from one specific province will only consume in the store operated by people from the same province. These informal organizations are very cohesive. Various social groups formed their own sub-culture, giving rise to conflicts and collisions in the traditional enclosed village.



Figure 12: spontaneous formation of commercial facilities

3.3 Interpretation of these issues

3.3.1 Administrative power conduct a great effect on the urban and rural development

In China, the urban construction is always influenced by administrative power. Suburban towns are always neglected by the government, while the government has attached particular importance to the construction of suburb cities, like Jiading, in the past decade. Anting cluster and Nanxiang-Jiangqiao cluster are also valued as these areas are adjacent to the central city of Shanghai. The northern suburban towns can hardly obtain permission for construction lands from superior government. Over the years, some towns have no public construction projects involving education, health care and other social undertakings. The migrants living in the villages around the township cannot get high-quality public services. The level and quality of urbanization lags behind the economy development. New industrial projects in these towns have taken up a lot of farmland and village land, but most of resettlement sites are in Jiading city, which makes a lot of local villagers move to Jiading city. Suburb towns can hardly attract local people to live there.

Although the construction of suburban city is very important, suburban towns are also key units of the urban system in the process of the spatial structure optimization.

3.3.2 Incomplete "two-way flow" migration causes the instability in social structure

For the migrants, they come to Shanghai for better economic benefits and good public

services, but it's hard for them to complete the total migration and become "urbanized". First, they cannot adapt to the local culture and language immediately and they have to endure the exclusion of the natives. They tend to choose spontaneous isolation, namely living in those informal social groups formed by people from the same place, and then some similar "ethnic enclaves" are formed. Under this process, the traditional rural society has changed from the original closed community into a heterogeneous community composed of several isolated social groups. They hope to receive an ethical and social exchange and mutual assistance through these spontaneous formation of "social circle". In fact, for those just moving in Shanghai, this is also a special kind of social capital (Zhang, 2008). Although many migrants have settled and gradually adapted to the local life, but it is difficult to achieve complete assimilation. On the one hand, they will face some institutional barriers for welfare, leading to social group segregation. On the other hand, the traditional Chinese people have deep local complex, so they cannot totally leave their hometown where the elders live, that's why there's always large scale transport during the traditional Spring Festival.

For the natives, they want to enjoy the urban life and convenient services and facilities, but also hope to return to the quiet villages at the weekend to enjoy the countryside life. The local people is not willing to give up their rural household registration and homestead. In fact, there lacks of formal withdrawal mechanism. In many rural families, only the elder people hold rural household registration. When the elderly die, although the government can legally reclaim homestead, housing as the attachment of homestead can be inherited by their children.

4. Discussions and Solutions

In this part, we put forward some suggestion for the future development of suburban towns.

4.1 *Welfare enhancing is the priority of urbanization*

Aspirations for a better life is the motivations of migration. The migration dynamic is both industry-driven and welfare-driven in Shanghai suburbs. The living environment and public services in suburban towns should be enhanced, otherwise these suburban towns can hardly attract high-level talented persons to work and live there, which will affect the process of industrial structure adjustment and optimization. High quality of public services and service levels will also attract local peasants to live in towns. So welfare enhancing and people-oriented idea are always the priority of urbanization. A good township will also support the industry development.

4.2 *"Smart shrinking" strategy should be implemented in rural area*

In Shanghai, most of those who hold rural household registration are hardly engaged in agriculture. According to the statistical data, the agricultural income of rural family is less than 5% in average. Their lifestyle is almost the same as those living in cities. The gradually reducing number of farmers will finally result in the shrinking of rural areas. Despite the dwindling number of farmers, the housing area continues to increase. It can be inferred that farmers tend to build more housing even if they do not live in, they can rent these housing to migrants. In fact, some rural area is never traditional countryside scenes. For those chaos and dilapidated rural area, "Smart shrinking" strategy should be implemented. Farmers should be guided to abandon the homestead in rural area and live in new housing in towns provided by the government. At the same time, those migrants living in villages cannot be ignores. The government should increase the supply of low-priced housing market.

4.3 *Self-management system of migrants is expected to be explored*

The invasion of migrants changed the original social structure in suburban towns and rural areas. The increase of conflicts between natives and migrants and the difficulty of social governance cannot be ignored. Self-management system of migrants should be explored to

guide these migrants to integrate into local communities. They should be allowed to participate in community management. In this way, the self-management organization will guide them regulate their own behavior, which is helpful to avoid social conflicts and promote harmony.

5. Conclusion

Suburban towns have become main settlements for migrant workers under the circumstance of "two-way flow". In the process of dramatic social structure transition, the development problems of suburban towns emerged. The root of the problem is both related to the neglect of suburban towns by the superior government and the incomplete "two-way flow" migration. Facing with these dilemmas, we argue that the welfare of migrants should be valued and people-oriented idea should be always the priority in urbanization process. Public service facilities and physical environment in suburban towns should be strengthened to attract more local people to live in towns. The self-management system for migrants should be explored to avoid social conflicts and promote harmony. Considering the lasting decline of rural population, "smart shrinking" strategy should be implemented in some decaying villages.

It is a common way to redistribute urban residents through the development of suburban cities and towns, but it becomes more complicated in this migration age. The case study of Jiading illustrates the importance of analyzing the migration and social structure transition process to figure out the mechanism of these problems.

Acknowledgements

The authors express their sincere gratitude to Prof. Min Zhao from Tongji University for his enormous help in the research and writing this article.

Endnotes

This paper is supported by the research funding of Shanghai Tongji Urban Planning & Design Institute.

The main sources of data related to this article are local statistical yearbooks and the sixth national census.

References:

- Cheng, J. and Wang, C. H. 2009. Study On Floating Population Crimes in Shanghai. *Journal of Shanghai University of Political Science and Law*, (5), pp. 82-86.
- Ravenstein, E. G. 1885. The law of migration. *Journal of the Statistical Society*, Vol48.
- Service and Administrative Division of Migrant Population in National Population and Family Planning Commission of P. R. China. 2012. *Report on China's Migrant Population Development in 2012*
- Zhang, Y. T. 2008. The Stigmatic Situation and the Coping Strategies: A Case Study of the Adaption of the Floating Population to Urban Life and the Community Change. *Society*, (5), pp. 126-147.

Track 2: Valuing What Already Exists

49th ISOCARP Congress Proceedings



**Frontiers of
Planning**

**ISOCARP
Congress
2013**

**BRISBANE
Australia
1-4 October**

“Utilization Analysis of Baghdad City Urban Waterfront”

Alwehab, Abdelwehab
University of Baghdad, Iraq

Synopsis : Urban waterfronts are vital components of the urban landscape for cities with such areas. There are legal as well as planning implications for optimizing land uses within. An essential element to a successful policy for developing land strips along the river basin is a clear definition backed by a legal framework. A review of number of examples from different parts of the world indicates no universal approach to dealing with areas adjacent to water bodies . A survey of land uses along the waterfront of the city of Baghdad clearly indicates underutilization ,which constitute a social and economic loss to urban residents.

1. Introduction

Urban Waterfronts for cities that are dissected by rivers are among the most important natural resources possessed by these cities. Benefits provided by the river to the city can not be confined to aspects of aesthetic and recreational advantages ,but extends also to the economic and social aspects, so dealing with areas adjacent to river banks pose critical issues and should be of interest to urban planning professionals and the general population of the city alike.

The continual increase of urban residents in general generates pressure on land through competition between various and sometimes incompatible land uses. The clearest form of competition is evident in the increased demand for land for uses that offer higher financial returns directly at the expense of uses that provide free public service to residents. The banks of the rivers in cities may be among the most obvious losers in such a competition, given the limited supply versus high demand on the ground within this land strip given the natural attraction characteristics for a wide range of economic activities. Among the principal goals adopted by decision-makers with respect to urban waterfronts is that these banks should be available primarily to provide efficiently for the needs of the city's environmental, economic, social and entertainment demands of city residents, in order to maximize benefits that are sustainable for generations to come .

2. Objective of this research

The main objective of this research in its first part is to review a sample of policies that must be followed to deal with waterfronts within urban areas. This objective through presenting an overview of international case studies of selected cities which successfully dealt with this aspect. The second part of the research is an attempt to assess the uses of the land adjacent to the Tigris river waterfront within the city of Baghdad, and evaluate the compatibility of current land uses to planning, legal, and urban design policies. The evaluation is in light of existing and declared statutes and policies put in place in order to achieve maximum benefits, and allow the proper exploitation of waterfront at various levels of development potential.

This article in general is trying to tackle the following questions: -

- . What are the appropriate land uses of urban waterfronts.
- . What are the principles that guide urban design of land adjacent to the river.
- . What are the existing Laws that govern land uses within waterfronts in Iraq.
- . What is the nature of land uses adjacent to the Tigris River in Baghdad.
- . The conformity of the current land uses to declared planning and legal requirements

3. Research hypothesis

The research assumes that there is clear imbalance in the utilization of the waterfront contrary to legal and urban design objectives laid out in legislations and urban master plans within the city of Baghdad. This condition is due to the lack of a clear policy and vision in dealing with these critical areas that are of utmost importance for a city like Baghdad, which is situated within the dry arid climate region. In addition, the research assumes that the current land uses do not reflect the optimal use of these spaces, and thus is reflected negatively on the environmental, economic, and social development of the city. For the purpose of testing the hypothesis, a land use field survey was conducted and results were analyzed through the use of the geographic information systems (GIS) technology to derive indicators supporting the hypothesis.

4. Urban Waterfront Definition

There is no specific definition agreed upon of the concept of urban waterfront. Reviewing the literature on the subject highlighted several definitions of public waterfront in urban areas. Among those is the definition of Breen & Rigby 1994 which views the water front as "the urban edge of the water in cities and municipalities of all sizes, and water can be a river, lake, Sea, Gulf or channel that includes a wide range of uses such as wildlife reserves, or cargo ports, which can be planned in an integrated projects, or scattered with random order over long periods of time due to multiple owners. Waterfronts also can include buildings that are not on the Water directly but linked visually and historically to it through a wider project." Many of the waterfront definitions river has dealt with it from the standpoint of functional use as reported by Glazer & Delaporte 1980 that describes the waterfront as the harbor area within urban areas, and is located on the coast and along the rivers and be the final point for water shipping channels.

Any definition should be derived from local conditions of the river basin, as well as the functional nature of visual and historical aspects of these waterfronts. Therefore, we find that the Department of irrigation and drainage in Malaysia has defined the waterfront as the urban space that fall within fifty meters from both sides of the river's edge, While Kenyon 1968 presented a description of river waterfront as the area adjacent to: -

- A. Shipping ports used on a large scale.
- B. Located within walking distance (305 meters) 1,000 feet from the water's edge.
- C. Falls within the ordinary scope and fabric of an Urban area.

Furthermore, for the purpose of issuing waterfront land use regulations, the City Planning Department of the city of New York has been identified the waterfront as the distance extending from the water's edge at its highest level all the way to a depth of 244 meters (800 feet) inland. This distance is set since it represents the common length of city blocks. In addition, it represents the maximum distance to maintain the visual corridors to the river waterfront.

Iraqi laws define waterfronts in general as the distance from the water edge at its highest level extended 100 meter inland, where certain restrictions are placed on permissible uses

within the 100 m strip of land. This definition will be adopted by this article to analyze land uses within the selected study area of Baghdad's waterfront.

5. Dealing with Urban Waterfronts

The Relationship between waterfronts and cities is usually a historic one. Rivers were one of the most important modes of transport, and waterfronts were important commercial sites for the supply and export of goods of all kinds in addition to being areas for the enjoyment of nature. Over time and with change of technology this relationship has undergone considerable transformations ranging from periods of recovery to shrinkage in importance, and to revival of the role of these waterfronts to be an integral part of the physical structure of cities.

The outlook of river waterfronts evolved in historic cities and generally passed through three phases.

Phase one is the pre-Industrial Revolution, where they were treated from an environmental perspective and rivers were considered essential supplements to the survival of human settlements on its banks did not take into consideration the consequences of dealing irresponsibly with water as a precious resource.

Phase two is the stage of the Industrial Revolution, where the relationship with the river in the cities based on the utility and the river considered as one of the inputs to the industrial process, which was done in accordance with market mechanisms.

Phase three is the current stage namely the post-industrial revolution where the relationship between the river front and city dwellers has taken an aesthetic perspective serves mainly recreational and entertainment activities and dealing with the river became according to social pressures and diverse desires of the population.

Urban waterfronts are a vital part of the national heritage, and these areas hold the historical roots of this heritage, and provide an important natural outlet in crowded urban areas. In many instances these waterfronts contain a vast untapped territories which can be a nucleus to re-generate and revitalize urban areas and provide some of the best opportunities for urban renaissance. The desired outcomes of waterfront renewal should not be measured through the number of jobs generated or realized increase in the price of real estate property, but also requires the need for a broader perspective and long-term impact that can be accessed.

The Issue can be complicated which require to strike a balance between appropriate land uses and functions. The intention here is not to create mixed uses mixed ,or finding giant projects with a variety of land uses. There are experiments carried out by many cities around the world to revive the its waterfronts, including the mega project of Canary Wharf in the city London, where some believe that the project is not sustainable and tabbed enormous investments within a short time span, while other projects may take an entire generation to accomplish. Perhaps one of the most important lessons learned from projects of this size is the need to follow parallel development of the vast river bank within a reasonable period of time.

General principles for any initiative to deal with the river and the waterfront in order to achieve sustainable development are: -

- Simulates the spirit of the place and location but connected to the city as a whole.
- Look unique in its design and not a duplication.
- Provides sustained public spaces and elaborate design.
- Respect the city's history and architectural heritage, but while avoiding the reproduction of the past.

- Integration with the surrounding areas and linking the waterfront with rest of the city.
- Easy and a short access distance from surrounding districts.
- Respond to the nature of demand for these areas and maximize the existing potential.
- Take advantage of the waterway for entertainment purposes and practical aspects.
- Attract uses that offer added value of feeling secure and calm generated by the presence of water.
- Protect and improve water quality and natural life

Research and contemporary studies on the development of waterfronts started since the sixties of the last century, including a study of Hoyle in 1960, and Kenyon in 1968. The research continued to expand in the eighties, and nineties to include other topics including water transportation, impact of politics and urban planning on waterfronts such the study of Gordon in 1996, and Fanstein in 2001. The impact of architecture on the waterfront was looked at in the study of Maline in 1996, and the impact of urban design as in the study of White in 1993. Other studies discussed the relationship between the development of waterfronts and its integration with the city from the perspective of urban planning as in the study of Meyer in 1999, and Hoyle in 1989.

Other studies have addressed the relationship between the waterfront river and water body next to it, for example, the study of Lynch in 1976, has designed the exploitation of the river on the basis of the degree of integration between waterfront and water as part of a more comprehensive study of rehabilitation (River Baramana) in Australia. As a result of the diversity of uses land along the river, the waterfront was divided into three main uses (housing, employment, and recreation areas) and created three levels of integration, namely, (high, medium and low). Results of the study confirmed that about half of the occupants of the waterfront have used the river or acknowledged its importance in their district, while others did not give this issue any importance.

6. International Waterfront Planning

To get acquainted with policies adopted by major cities in the world with significant waterfront areas, New York city comprehensive waterfront plan "Reclaiming The City's Edge" is selected. The plan is prepared by the Department of City Planning in the city in 1992 to regulate land uses within the waterfront, where the plan provided a clear vision of the form that waterfronts should be on in the twenty-first century to include the following: -

- Parks and open spaces with ample and diverse activities to be made accessible to residents of the city and surrounding areas.
- Enable people to swim, fish and use boats in clean water.
- Rehabilitation and care for natural sites.
- Industries related to the water must be brought back to prosperity in specific locations serviced with efficient infrastructures.
- Ferries cross the city back and forth, integrated with an interconnected systems linking bicycle paths and pedestrian corridors to ease traffic congestion and air pollution.
- Creating a panoramic vistas to enjoy the beauty of rivers.
- Meet the housing needs of the city through housing projects and job opportunities catering to different levels of income in an attractive setting.

The plan organized the waterfront into four main functions of the waterfront, namely: -

1. Natural waterfront consists of beaches, wetlands and wildlife sites and critical ecosystems and the waters of the river itself.
2. Public waterfront includes parks, squares, piers and sidewalks and public areas which provide visual contact with the water.

3. Working waterfront water-related industries as well as water transportation.
4. Redevelopment waterfront include land uses that have been changed recently or areas that are used in an inefficient manner and have the potential to achieve a positive addition when changed.

This categorization system determined that 30% of the should be allocated to the natural waterfront, and identified 100 sites within the waterfront to be Public. In addition, the plan proposed the rehabilitation of 50 public park as well as transforming 25 public street to end at the waterfront. 40 site were selected to create corridors and spaces for public use surrounding commercial and residential sites. The plan also proposed the establishment of between 50,000 and 70,000 housing units within land parcels that will be re-zoned. The working waterfront will occupy six specific sites with a total area of 2,555 acres.

One of the most important objective of the Comprehensive Plan of New York City is to promote uses that have direct relation and should be close to the river's edge, so the plan proposed three land use categories within the waterfront : -

- Water Dependant Uses, which must be adjacent to the river, including marinas, harbors, repair of boats , water transport ,recreational buildings, beaches and fishing piers.
- Water Enhancing Uses include mainly recreational and cultural uses including retail trade and Leisure, which promotes universal access and comfort to the public. Other uses can be added such as sports centers, museums and galleries, parks, museums and galleries, parks, games, swimming pools, hotels, and restaurants.
- Non Water Related Uses which do not require a water location and their presence near the water edge do not add to the value of the waterfront, and the ability of the public to enjoy the public side of a river, examples parking fields, warehouses, Industrial installations, private residences and office buildings.

One of the most important characteristics of this plan is to emphasize the principle of free public access to the waterfront which is considered as precious resource to the city. It was a major goal of this plan to secure and maintain corridors to ensure freedom of access. Thus, the plan recommended that 15 - 20% of any use on the front river should be kept at the disposal of the general public. This ratio were approved to strike a balance between the desire of the city's residents to enjoy the waterfront, and the cost of maintenance and the provision of public amenities ,as well as costs borne by investors for the development of some waterfront sites.

7. River Waterfront in Iraqi legislations

Tigris River occupies a special place in the history of the city of Baghdad, where the river is closely linked to the urban fabric and the waterfront is one of the most important components of the natural landscape of this fabric and a point of stability which gives the city its distinctive character. The river is basically the central nerve of the city and an essential hub of Baghdad where both sides grow almost equally around it. The forecast contained in the "Perspective of Baghdad 2030" issued by the Mayoralty of Baghdad anticipates that residents of the city of Baghdad will reach 9.88 million by the year 2030. The perspective emphasized on the great importance of the Tigris River within the urban landscape of the city, and regarded as one of the symbols of nature affecting the shape of the city and has a large dominance on the climate and general environment. To talk about a number that is close to 10 million people living within a city which already suffers from great pressures over the land , and more particularly in the provision of environmentally friendly spaces and aesthetically pleasing to activities of recreational, social and cultural nature. These facts place a paramount importance on developing efficient land use management policies , where the waterfront must be given a special attention due to its limited supply and competing demands.

A number of Laws and regulations were issued prescribing the manner of dealing with land adjacent to rivers in Iraqi cities in general, and the city of Baghdad in particular. The Baghdad city master plan law that governs land uses within the city, prepared by the Polish firm "POLSERVICE" in 1971 is valid till the present. The plan which is a legal document stressed that the presence of the Tigris River is one of the most important features of the city of Baghdad, and its multiple curvatures add beauty and distinctive personality to the city, hence considers the Tigris River as the backbone of the city.

In this sense, the master plan regarded the "Tigris River Belt Zone", which is a strip land area with a width of about 2-3 km along the Tigris River.

The city of Baghdad Master plan has divided the Belt Zone within the city into three sectors. These sectors are:

1. The northern section represented by the Green Zone north of the city which includes orchards, parks, forests, and residential areas including Adhamiya sectors and Kadhamiya.
2. The central section represented by the central area where business centers, and associated activities are located. It represents the heart where all other functions are tied to.
3. The Southern Section represented the region south of the city where Industrial Services, activities and storage are located.

On both sides of this belt (Tigris belt), self-contained residential sectors were designed, and connected to the river belt from one direction and to surrounding external areas from other directions.

The master plan proposes taking advantage of the waterfront through the creation of a diversity of land uses on its banks. The vision includes creating multi-story housing sites, as well as parks, tourist attractions, hotels, restaurants and pedestrian paths. In addition, the plan proposes linking the river banks to inland areas through green corridors that lead directly to the waterfront. The plan also proposed the creation of a rapid river transportation network to utilize the strategic location of the river right in the middle of the urban fabric to facilitate movement of passengers. Needless to say that hardly any of the vision presented in master plan has been realized due to protracting military conflicts within the country.

The Building Controls of the city of Baghdad which regulate design and construction according to the zoning plan has merely recognized land uses in the area of Abu Nawas street adjacent to the Tigris River. This street represents only a small portion of the waterfront, and thus ultimately left the majority of the waterfront unregulated. In paragraph 2,2,3,1 of the controls, land uses in the street were restricted to residential and tourists related activities, where building heights should not exceed three times and half the size of the land parcel and a maximum of five stories. New construction must not exceed three stories. With regard to determining land uses along the Tigris River within the city limits of Baghdad, the Master Plan has indicated that building controls should be in accordance to the Shores Utilization Law.

The "Shores Utilization Law" No. 59 of 1987 is a legislation issued by the central government, which regulates the exploitation of shore land areas of the River Tigris and Euphrates, and its neighboring territories, as well as securing passage of flood water, and prevent pollution regardless of the type of relationship to property land rights.

Article III of the Act states the following:

"It is not permitted to use any land covered by the provisions of this law for agriculture, planting, or create a project, or to build without the approval of the Ministry of Irrigation and the Ministry of Agriculture."

The Law separated the land adjacent to the river into two parts. The first is the river bank which is not exposed normally to floods even during high water levels, and the second

section is the low elevation land below the river banks which can be considered as a beach that can experience periodic floods.

Article IV of the law identified certain permissible uses of land behind the river bank. Uses permitted are orchards, cultivation of seasonal crops, and the construction of housing for owners of these parcels conditional to the fact that no permanent structure can be erected less than one hundred meters from the river edge. The beaches which are the lower elevation exposed land area can be exploited according to the law for seasonal crop cultivation and the establishment of tourist public buildings conditional to the fact that the beach width is not less than one hundred and fifty meters.

The shore utilization law, however, gave waterfronts within urban areas a distinguished characteristic, and authorized municipalities to regulate land uses within city limits in accordance to the vision and needs of their land use master plans.

The Mayoralty of Baghdad in its outdated "Land Use Mater Plan" reiterated the compliance to the articles of law 59 as far as exploiting the waterfront without taking advantage of the leverage empowering municipalities to formulate their own waterfront land use code.

Nonetheless, given the specificity of the city of Baghdad as the nation's capitol, Regulation No. (2) for the year 2000 was issued by the central government to be known as "Regulations to Prevent Encroachment on The Tigris River Trim Line within The City Limits of Baghdad".

These regulations stipulated vacating 15 meters strip of land from the river basin edge (Trim Line) inland. Thus, this 15 meters strip is considered as the river's right of way for the purposes of river monitoring, maintenance and dredging. Furthermore, in the year 2000, Regulation 121 was issued prohibiting the construction, or granting any building permit within the river Trim Line.

The "River Trim line" stated in these regulations is the distance confined between both sides of the river basin which allow the maximum water discharge within the city Baghdad of 3000 cubic meters per second in waterfront segments where river banks is not veneered with stone. In segments where the river bank has stone cladding, the trim line is therefore the distance between the stone retaining walls edges of the river banks.

It is evident that the Iraqi legislature, as well as physical plans has stressed the importance of the waterfront in urban areas in general, and within the city of Baghdad in particular. Land uses adjacent to rivers are of exceptional value to the urban fabric, and must be dealt with in an extreme caution so as to keep this limited strip of land accessible to the general population, and put it into the best uses in order to maximize the potential offered by these areas for social, economic, and environmental development.

8. Field survey of the Tigris river Waterfront

For the purpose of testing the research hypothesis, the central section of the Tigris waterfront within the city of Baghdad has been selected as the study area. The area extends from the new Adhamiya bridge to the north until the Jadiriya bridge to the south as shown in figure 1. The total length of the waterfront along the study area is about 13 kilometers. Within this strip of the river, most of Baghdad's districts that are characterized by intensive land use are located on either side of the study area. Functions include residential, commercial and governmental, in addition to spaces that are currently untapped. To identify the nature of land uses, a comprehensive field land use survey of the river bank within a 100 meters strip of land from the edge of the river was undertaken. This distance is stipulated in the law of Shores Utilization law No. (59) as mentioned earlier.

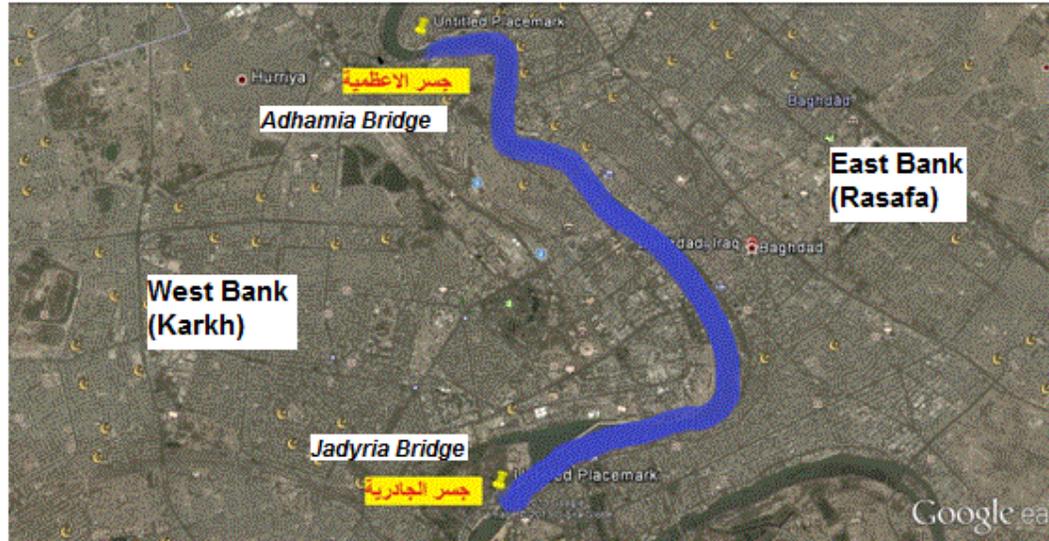


Figure 1 Waterfront area of the Tigris river under study

Through the survey it became clear the existence of eight major land use categories within the study area. The uses are residential, governmental, religious, green open spaces, untapped spaces, commercial leisure activity, streets, in addition to a single area which is an artificial lake created within a short distance from the river edge as seen in figure 2. The total area under study within the 100 meters depth of the waterfront was 3039180 square meters, or around 304 hectares. The study area is subdivided into eight segments with each segment represents the area confined between two bridges. The study area starts from Adhamiya bridge to the north of the city, and ending at the Jadiriya bridge to south.



Figure 2 Jadyria Bridge- Suspension Bridge segment of the study area

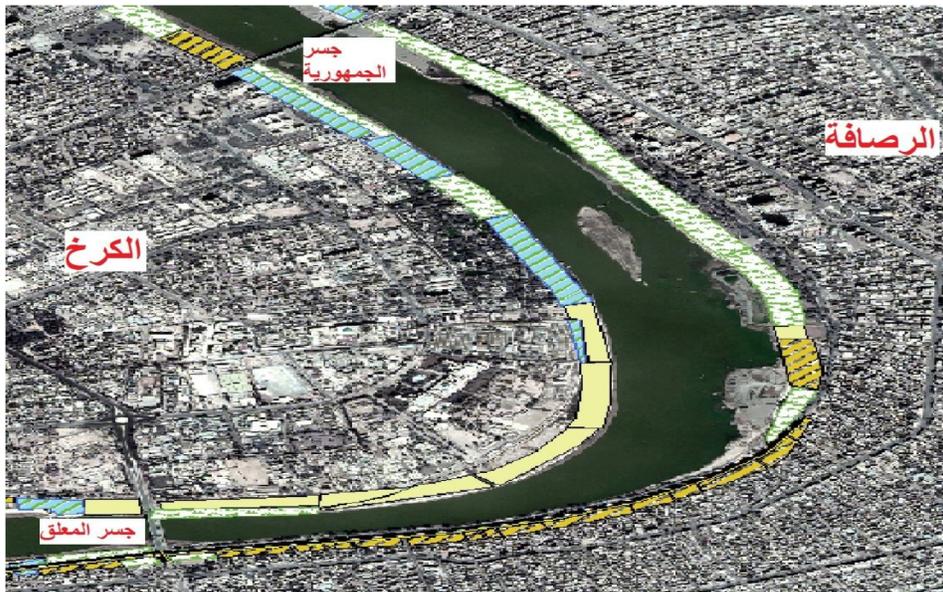


Figure 3 Suspension Bridge - Republic Bridge segment of the study area

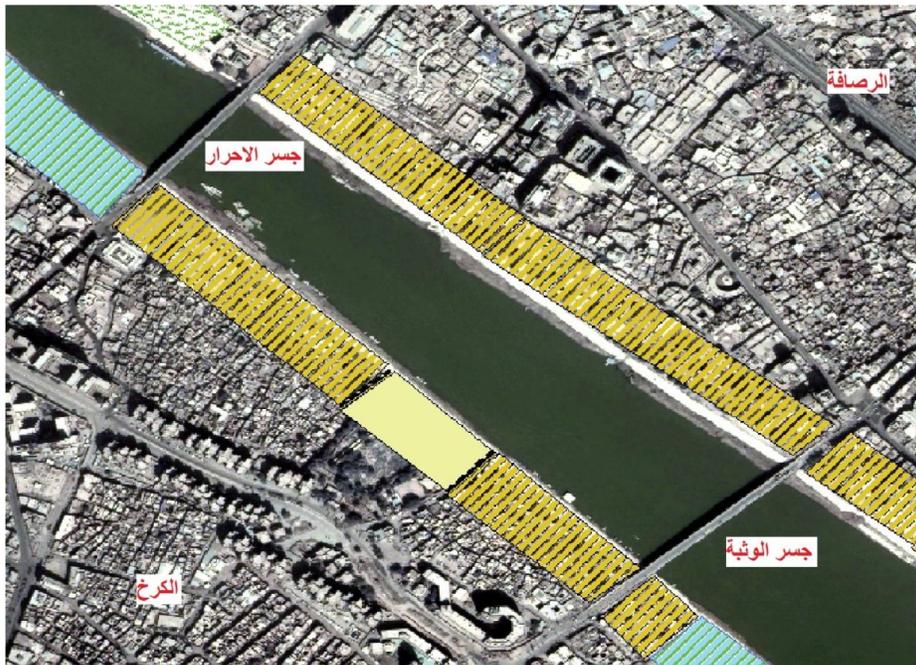


Figure 4 Ahrar Bridge – Wathba Bridge segment of the study area

<i>Study Area Segment</i>	<i>Left Bank,m²</i>	<i>East Bank,m²</i>
<i>Jadyria Bridge- Suspension Bridge</i>	<i>322554</i>	<i>267922</i>
<i>Suspended Bridge - Republic Bridge</i>	<i>375215</i>	<i>533199</i>
<i>Republic Bridge - Sinak Bridge</i>	<i>55371</i>	<i>56772</i>
<i>Sinak Bridge – Wathba Bridge</i>	<i>59619</i>	<i>60101</i>
<i>Wathba Bridge – Ahrar Bridge</i>	<i>95489</i>	<i>102374</i>
<i>Ahrar Bridge - Bab Al Mo'adem Bridge</i>	<i>91674</i>	<i>110785</i>
<i>Bab Al Mo'adem Bridge - Sarafiya Bridge</i>	<i>202723</i>	<i>135921</i>
<i>Sarafiya Bridge - Adhamiya Bridge</i>	<i>238176</i>	<i>313640</i>
<i>Subtotal</i>	<i>1440821</i>	<i>1580714</i>
<i>Total Area</i>	<i>3039180 m²</i>	

Table 1 Total land area of segments along a 100 meters wide strip of waterfront

Analysis of the data generated from the survey has shown that the private residential land use which reaches 39.83% of the 100 meters land strip is the most dominant use within the study area along the edge of the river as shown in Table (2). The segment with the highest green open space designed for public purposes is shown in figure 3, which is waterfront confined between the Suspended bridge and the Republic bridge. It can also be seen that in certain segments of the study area the majority of land uses are residential with limited public access to the river bank for non residents of these districts as illustrated in figure 4 referring to the segment between Ahrar and Wathba bridges.

Water Body %	Religious %	Streets %	Government Buildings %	Green Open Space %	Recreational %	Untapped Areas %	Residential %	Study Area Segment
4.18	0	2.03	0.65	1.39	2.64	1.90	6.63	Jadyria Bridge - Suspended Bridge
0	0	0.49	4.30	11.56	0	6.72	6.83	Suspended Bridge - Republic Bridge
0	0	0.00	0.80	1.22	0	0.00	1.68	Republic Bridge - Sinak Bridge
0	0	0.00	1.33	0.00	0	0.00	2.62	Sinak Bridge - Wathba Bridge
0	0	0.00	0.00	0.00	0	0.82	5.70	Wathba Bridge - Ahrar Bridge
0	0.15	0.00	3.88	0.47	0	0.00	1.13	Ahrar Bridge - Bab Al Mo'adem Bridge
0	0	0.16	1.51	4.18	0	0.00	5.87	Bab Al Mo'adem Bridge - Sarafiya Bridge
0	0	0.05	0.00	8.30	0	0.40	9.37	Sarafiya Bridge - Adhamiya Bridge

Table 2 Land Use categories percentages per study area segments

Government buildings have a share of 12.46% of the waterfront, while recreational areas exploited commercially did not exceed the rate of 2.64% of the total area. Streets running along the waterfront and within the 100 m strip occupied about 2.74% of total area, while religious buildings did not exceed the rate of 0.15%. An artificial lake adjacent to the river and within a walking distance from the river edge led to the loss of up to 4.18% of the waterfront due to lack of public access to either the lake or river. Figure 5 summarizes the rates of land uses and overall within the study area.

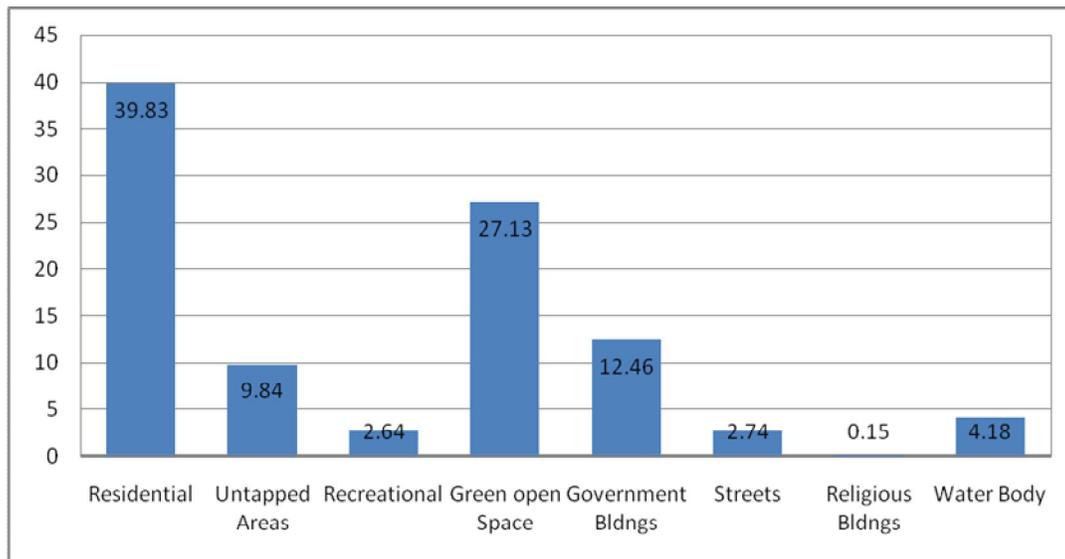


Figure 5 Land use in the study area

9. Conclusions

Initial indications of this study show clearly a defect, and imbalance in the nature of land uses within the waterfront under study resulting in missed development opportunities whether recreational, environmental, or residential; not only for citizen of Baghdad in particular, but to the local economy of the city in general. The most prominent feature of this imbalance is the low percentage of leisure areas that exploit the river to provide a breather to the city's population. In addition, the high percentage of private residential use dramatically reduces the chances of exploiting the waterfront for public interests, and limit the freedom of access to the river bank.

the Proportion of green open spaces with just over a quarter of the total area constitutes a low rate for a city located in a dry and arid climate region, thus limiting chances of creating favorable micro climate zones. The presence of governmental uses on the river is not justified since their presence is not necessary in these sites, and limit utilization to a few hours in the day time, thus depriving the population of these spaces for the most of the day. The other issue that exacerbates the problem is the creation of an artificial lake within walking distance of the river bank while at the same time inaccessible to the public. This peculiar practice resulted in the loss of approximately 5% of the waterfront.

Analyzing the results of the survey indicates that approximately 10% the waterfront is still unexploited despite the apparent lack of green and recreational areas along the river.

Furthermore, the analysis indicated that the nature of present uses and urban design of parts of the waterfront does not enable access to the general public, as well as limiting visual contact with the river which in itself is a moral and physical loss to residents.

10. Recommendations

The apparent inefficiency in the handling of land use functions along the waterfront requires the development of procedures and legal frameworks to reduce the loss of the significant benefits offered by the presence of a historic river which passes into the heart of the urban

fabric of the city of Baghdad. Procedures that must be implemented to improve the existing situation vary in terms of financial cost and the time period to achieve them. Among the measures recommended:

- Developing a special urban design scheme for the waterfront strip in the form of a master plan, and building controls specifically for this area in order to regulate land uses, as well as height, bulk and density of structures
- The preparation and implementation of a specialized management commission with financial and legal support from the central and local government due to the extreme importance of Baghdad as the political and economic federal capital .
- Urban design principles and practices should give priority to land uses promoting recreational, environmental, and open green spaces uses over other land uses.
- Achieve easy access to the river through a redesign of the transportation network surrounding the river waterfront so as to achieve connectivity, and facilitate access to water vistas.
- Guarantees free public access to river banks throughout the day and night.
- Expanding existing areas which afford spaces free of charge to the public for recreational purposes, provide shade from the elements, and employ public sculptural arts to create attractive public spaces within the strip adjacent to the river.
- Increase compliance of current land uses the vision and objectives stated in the city's master plan and laws in force.

References:

BREEN, A. And RIGBY 1994, D., *Waterfronts Cities Reclaim Their Edge*. USA: McGraw-Hill Inc.

"Comprehensive Development Plan for The City of Baghdad", The City of Baghdad Perspective 2030. Municipality of Baghdad. July 2006

FAINSTEIN, S. 2001, *The City Builders: Property Development In New York And London, 1980-2000*. 2nd Ed. . Lawrence, KS: University Press Of Kansas,

GLAZER, M. and DELAPORTE, T. C., *Improving your waterfront: A practical guide: Office of coastal zone management*. Washington, DC: NOAA and Heritage Conservation and Recreation Service. 1980

GORDON, D., 1996. *Planning, Design And Managing Change In Urban Waterfront Development*. *Town Planning Review*, 67(3), 261-290.

HEIKKILIA, Eric J., *Environmentalism With Chinese Characteristics? Urban River Revitalization In Foshan*, *Planning Theory And Practice*, Vol 12:1.

HOYLE, B. 2002 , Urban Waterfront Revitalization In Developing Countries: The Example Of Zanzibar's Stone Town. The Geographical Journal, 168(2),.

Iraqi Legislation Data Base, the United Nations Development Program for Iraq, 2011
<http://www.iraq-ild.org/>

KENYON, J. 1968, Land Use Admixture In The Built-Up Urban Waterfront: Extent And Implications. Economic Geography ,152-177.

LYNCH, L., SPENCE, M. And PEARSON 1976, W. Parameters For The River. Sydney: National Trust of Australia.

MALONE, P. 1996, City, Capital And Water. New York: Routledge,

“Master Plan of the City of Baghdad”, Law No. 156 of 1971

“Reclaiming The City’s Edge, New York Comprehensive Waterfront Plan”, Department Of City Planning, City Of New York.1992

“Remaking The Urban Waterfront”, ULI-The Urban Land Institute, Washington, D.C., 2004

WHITE K.N, BELLINGER E.G, SAUL, A. J., SYMES, M. And HENDRY, K. Eds, 1993,
Urban Waterside Regeneration: Problems And Prospects. Chichester: Ellis
Horwood.

Main Title: Valuing What Already Exists

Title: Cultural Heritage Planning and Preservation in Yoruba Cities

Case study of Ile-Ife, Nigeria

Author's ID: 135

AYANGBILE Oluwabukola (bukiayangbile@yahoo.com), ABIODUN Oluwafisayo
(f.fisayo@yahoo.com)

MSc Urban and Regional Planning Students, Year One

Department of Urban and Regional Planning

Faculty of the Social Sciences, University of Ibadan, Oyo State, Nigeria.

Synopsis

This paper examines how heritage places and spaces are protected and managed to enhance historical artifacts in Ile Ife, the 'Cradle of Humankind'. It suggests traditional historical planning tools as a re-vitalization planning strategy to preserve, manage and protect the sacred groves, monuments, traditional and religious landmarks that already exists.

1. Introduction

The term "Cultural heritage" by Hero Network (2010), refers primarily to the physical or "tangible cultural heritage" which includes monuments, groups of buildings and historic sites that are considered worthy of safeguarding for the future. The Article 1 of the World Heritage Convention (1998) defines the definition of terms as follows:

- Monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science.

- Groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science.
- Sites: works of man or the combined works of nature and man, and areas including shrines and archaeological sites which are of outstanding universal value from a historical, aesthetic, ethnological or anthropological point of view.

Places and objects may qualify as “heritage” because of their historic importance, because they are rare, they provide an opportunity for research, are particularly representative of a type, have aesthetic appeal, are evidence of creative or technical achievement, or have associations with social groups or significant people.

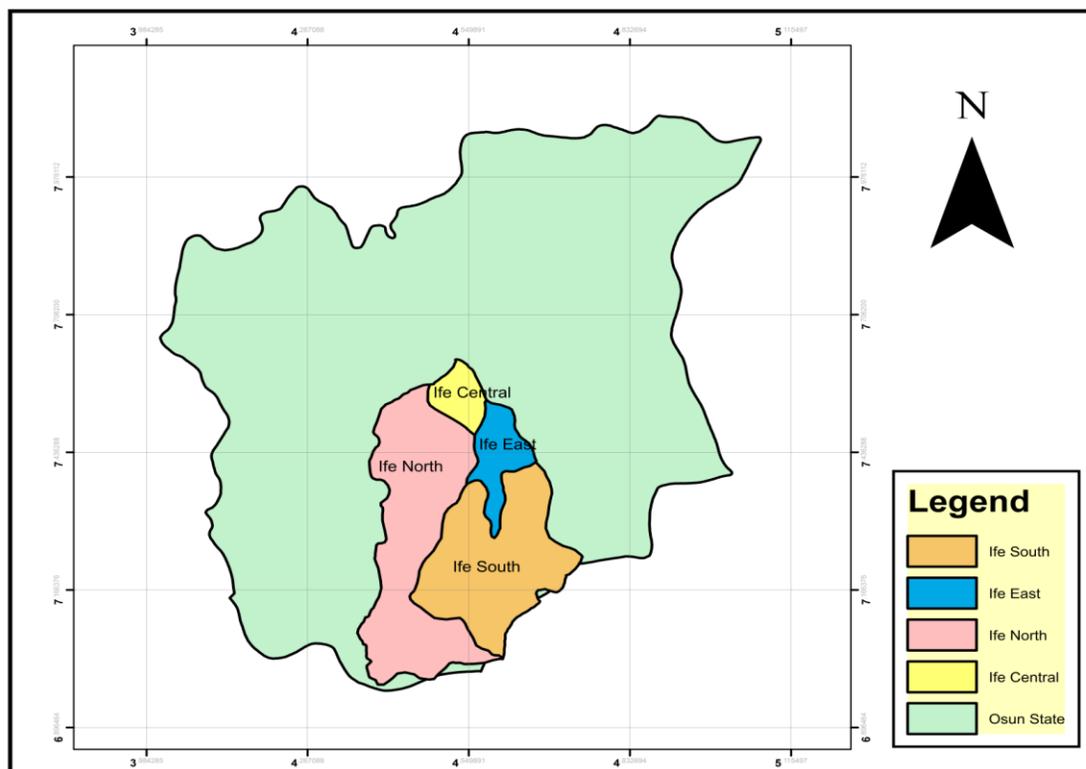


Figure 1: Ife Town in Osun State Context

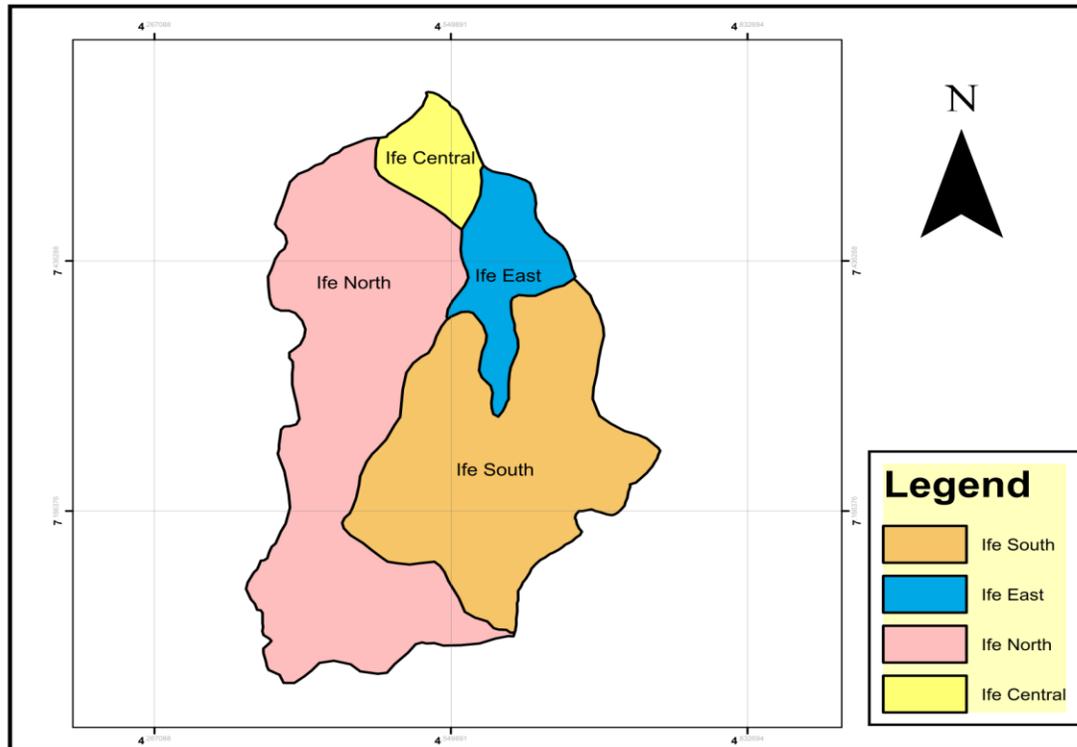


Figure 2: The Four Local Governments in Ile-Ife

Ile-Ife, also called Ife town, Osun state, southwestern Nigeria is one of the larger centres and probably the oldest town of the Yoruba people. It is considered by the Yoruba to be a holy city and the legendary birthplace of mankind and was held to have been founded by a son of the deity; Oduduwa. Ile-ife is located in the present day Osun State, Nigeria. Ife is about 218 kilometres northeast of Lagos. The town lies at the intersection of roads from Ibadan, Ilesha, and Ondo. Ile – Ife is located on longitude 4.60E and latitude 7.50N, with an elevation of about 275 metres above the sea level (Appolos, 2012). Physically, according to (Omotoso Eluyemi, 1986), the city of Ile – Ife is surrounded by a chain of seven hills namely Oke – Ora, Oke – Araromi, Oke – Owa, Oke – Pao, Oke – Ijugbe, Oke – Onigbin, and Oke – Obagbile. As a result of these hills, the town itself was built in a bowl – like physical layout which provides it with security.

Historical nodes of Ife comprises the traditional inner core with the Oba's (King's) palace, the Enuwa square, Ifa temple and the Ife city museum; the Obafemi Awolowo University (OAU formerly, University of Ife) campus, which constitutes a magnet for much of the town's labour force; the Mayfair-Sabo-Lagere commercial corridor; and the Sacred grooves or natural virgin forests that epitomize the tradition of the Ife indigenes. However, there are three clearly-

distinguishable locations where noticeable urbanizing development is taking place in Ile-Ife, each with its own unique characteristics. These are; the OAU Campus; the Mayfair-Sabo Commercial Spine; and the Inner Core. While these areas are distinct in themselves, they also are inter-related and likewise inter-dependent.

The Obafemi Awolowo University (OAU) campus epitomizes the best traditions in modern physical planning and architecture, in the West Africa region. The campus portrays good infrastructure and facilities planning and management, and general foresight. All roads (servicing the academic and administrative core area, students' halls of residence and staff quarters) are tarred; the whole campus is linked to the electrical grid (in addition to having its own independent power-generating plant); the Opa Dam is a local expedient for generating potable water to all nooks and crannies of the campus. (Osasona et al, 2009)

The Mayfair-Sabo Commercial Spine is the commercial nerve of the city. It is a 3-kilometre stretch along the Ibadan-Ilesa inter-urban road that passes through the centre of the town. What businesses had fitfully been practiced closer to the traditional core, had gradually migrated to this area for vibrancy. Today, not only has this been further entrenched, commercial activities have gradually spread, ribbon-like, along this axis: forward to Sabo (and beyond), towards the Ilesa end; backwards to Mayfair (towards the OAU campus), in the direction of Ibadan (Osasona et al, 2009). Small-scale as well as large-scale retail businesses are carried out in this zone. It also houses big investment houses (various banks, petroleum stations) and schools.

The Inner City Core is the traditional heart of the city. The city centre comprises the king's (*Ooni's*) palace, the Enuwa square, the Central mosque, the Oke mogun Shrine and other developments. In the early 1990s, the Enuwa square which was originally a place used for communal meeting; where the people gather and are addressed by the king from the storey building facing it has been transformed into a park with a full-size statue of Oduduwa at the centre of it. New constructions have also taken place and other buildings have also been modified from time to time; such as the Ife City Museum, the Ooni's palace and the Ifa temple amongst many others. The city core helps to conserve the cultural heritage of Ile-Ife.

Ile-Ife has undergone growth in various forms. It has grown from a small town with a legendary evolution into a city over the years and these changes has resulted in the following:

1. Encroachment- Some open spaces and sacred lands have been encroached upon, so also sacred lands. For instance, the ore groove which formerly covers about 5 hectares

in the past has been reduced to about 4 plots of land.

2. Religion and Western Education- Increase in people's western belief system and the influence of education has reduced participation in festivals, rituals and ifa followership. Also, the use of cognomen; commonly called '*oriki*' among the Yoruba people has been lost as many people now disregard the idea. The influx of foreign culture has depleted the traditional belief system. Now the greater percentage of people in the community practice Christianity or Islam and this has greatly reduced trust in the traditional culture and its practices.
3. No Proper Documentation- history has been lost due to lack of proper documentation and even where they exist, there are discrepancies from one place to the other.
4. No Proper Demarcation of heritage sites- the heritage places in the past were not fenced. In the ancient times, '*peregun*' as it is been called in Yoruba was used to fence heritage sites. Wherever '*peregun*' is used as demarcation, such place is identified as a sacred land. And due to lack of fence, these sites have been either encroached upon, misused by people who do not know about it and some materials even stolen from such places. It is in recent times that some of them are being fenced.
5. Loss of value of the heritages- much value is not placed on heritage sites anymore due to the influence of urbanization. Modern adventurous sites like cinemas, galleries, beaches have reduced visitation to heritage places.
6. Change in Architectural design in use- In the past, buildings were patterned after the Brazilian building style but now, the European style is being used. Courtyards was what was obtainable in the past and this fostered communal life, but now, the flat system is being operated and this has disintegrated communal life.

Time changes. Technology marches forward. Cultures differ from place to place. So also, rapid urban change is reforming the city and its ancient heritages. The cultural heritages which gives the beauty of the past a place on the exhibition stage of the new world are gradually being wiped off, the forest reserves and farmlands which supports the sustainability of a place and food security within its borders are being encroached upon, urban renewal schemes are taking over the city centres that used to be the heart of other activities and development. Hence, the need for heritage planning.

2. Methodology

Data for this study were elicited from two different sources that is primary and secondary sources. The primary sources include two set of satellite imagery covering the study area for 1986 and 2013. The imagery of 1986 was obtained from global land cover facility on path 190 and row 55 while that of 2013 was obtained from goggle earth. The imagery of 1986 and that of 2013 were subjected to unsupervised and supervised classification respectively using ILWIS (Integrated Land Water Information System) Software. Sample Sets were created on both images for proper assessment by the researchers. The sample sets created are; Bare Surface, Built-up Area, Marsh Land, Vegetation and water Body. The two maps show the level of growth of lfe.

The secondary sources of data include published and unpublished journals; and other related materials obtained from the Planning Board of the lfe East Local Government and the lfe city Museum.

3. Findings and Discussion

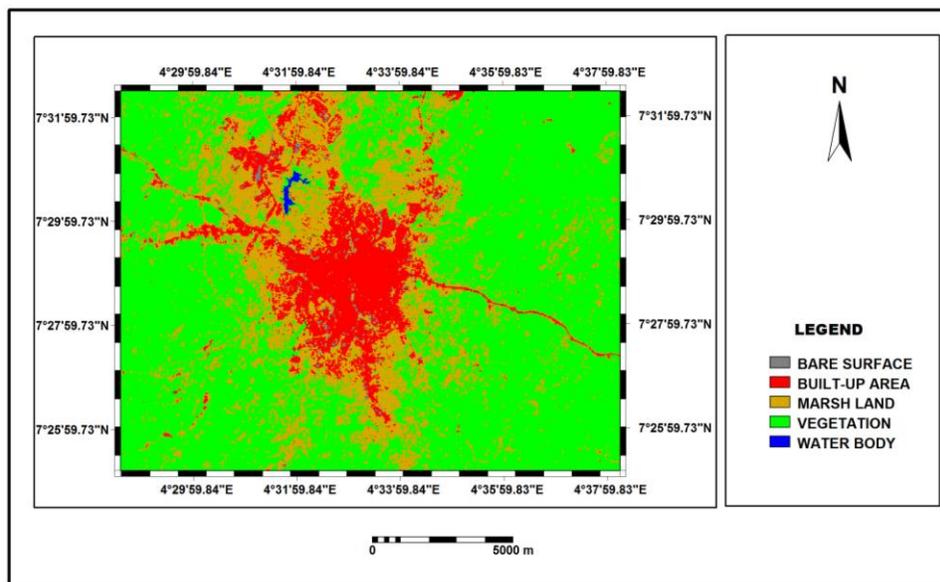


Figure 3: Classified Image of the study area, 1986

Source: Author (2013)

Table 1: Sample set for 1986

Sample Set	Area (Km ²)
Bare Surface	2.13
Built-up Area	25.13
Marsh Land	59.38
Vegetation	153.85
Water Body	0.03
Total	240.52

Source: Author (2013)

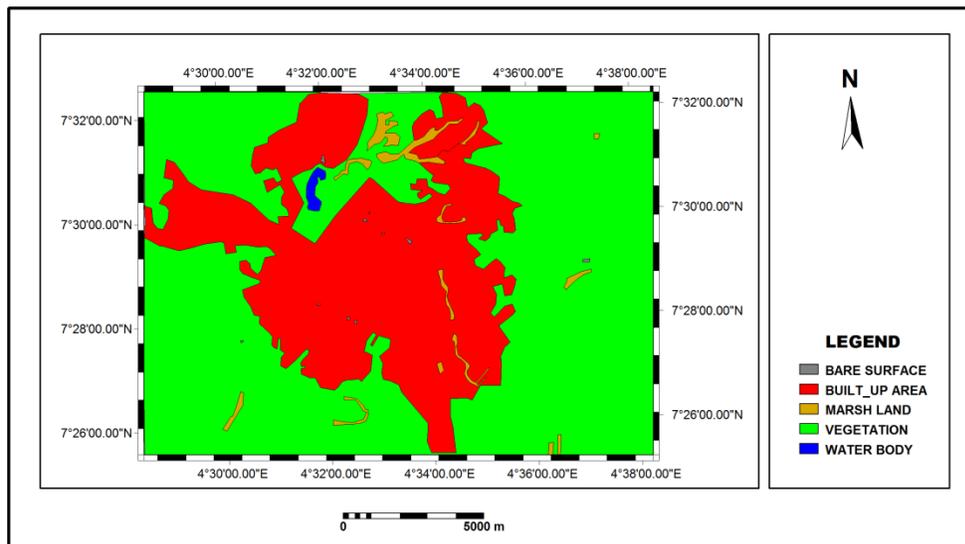


Figure 4: Classified Image of the Study Area, 2013

Source: Author (2013)

Table 2: Sample set for 2013

Sample Set	Area (Km ²)
Bare Surface	28.62
Built-up Area	77.74
Marsh Land	38.57
Vegetation	95.01
Water Body	0.58
Total	240.52

Source: Author (2013)

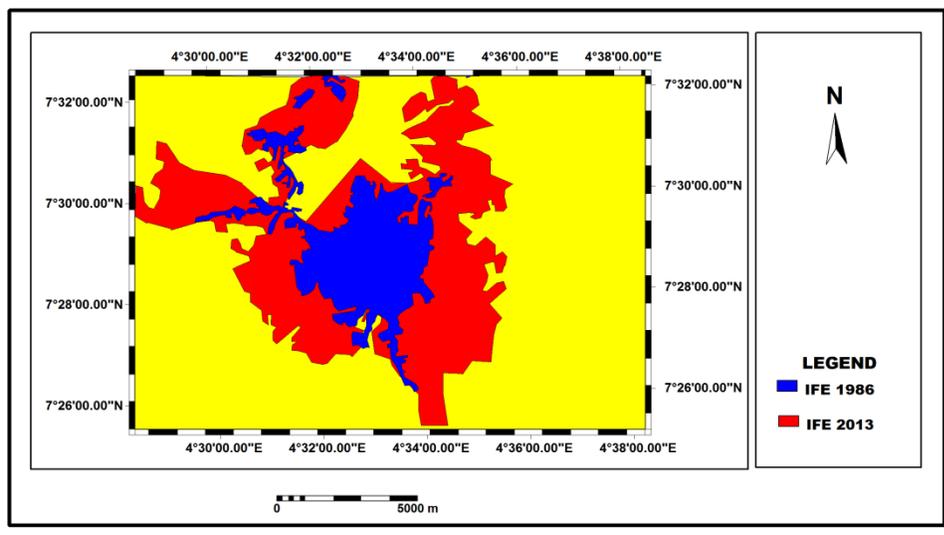


Figure 5: Classified Image of the Study Area in 1986 and 2013

Source: Author (2013)

Figure 3 and 4 shows the level of growth of Ife while figure 5 was used to show the changes that has occurred between 1986 and 2013 as pertains to the built up areas in Ile-Ife. The blue represents the extent of the built up areas in Ile-Ife as at 1986 and the red shows Ile-Ife in 2013. In the year 1986 the built-up area of Ife was 25.13Km² while that of 2013 is 77.74Km². Increase in development and human activities led to the decrease in vegetation and increase in bare surface/degraded land from 2.13Km² (1986) to 28.62 in 2013.

During a consultative forum with some elders and ‘Emeseres’ (palace guards), they identified some heritage sites in Ile-Ife and the maintenance strategies already put in place to preserve them. Festivals celebrated in Ile-Ife include the “Olojo” festival (Owner of the day) usually celebrated by the indigenes in honour of the revolutionary deity “Ogun- the god of Iron” and the 401 deities that resides in the ancient city of Ife; the “Edi” festival is celebrated once every year for a period of seven days, a period to discipline thieves, and the “Ifa Agbonmiregun” festival usually done first week of June, every year (where ifa priests from the whole world come together) with the aim to unite Ifa followership and also to integrate part of vibrant and prosperous community on peace.

Heritage sites in Ife total about 62 (Ife city Museum Records,2013); with several grooves, forests, shrines, temples and staff, some of which include; the Yemoo groove, Olokun groove,

Osara shrine, Yeyewara shrine, Igbo Irudi sacred forest, the ifa temple and the Oranmiyan staff. Traditional historical planning tools are employed to serve as a re-vitalization planning strategy to preserve, manage and protect the sacred groves, monuments, traditional and religious landmarks that already exists.

The management practices set in place to preserve these heritage sites include the following:

- Fencing: Fences have been built round many of the heritage sites to prevent encroachment of people and activities into such places. The Enuwa square (directly opposite the Ooni's palace) which has been re-modelled into a Park for example is now well fenced. Also, the Oke Mogun Shrine (south of the Ooni's palace) and the Ile Oduduwa (west of the Ooni's palace) has been fenced.
- Improved documentation: Emphasis is now being laid on documentation of the past history that were captured and properly retrieved, present day happenings, yearly celebrations and festivals. Also, the Ife museum Planning department acquires and preserves articles, journals and publications that captures Ile-Ife city cultural and physical planning activities for easy access in planning and for future references.
- The management of heritage sites by overseers and priests: To achieve this, priests were appointed over each of these heritage sites to manage and protect it. And it is these priests that organize festivals and celebrations that pertains to the heritage site they have been assigned to.
- Modification of sites and usage: A good example is the Enuwa square that used to be a communal meeting ground but which has now been transformed into a park to generate income. Even the Ogun Shrine that used to be just a symbolic tree (at the foot of which the rituals were performed), has been integrated in a refined way into the modern City Hall complex. The palace grounds and museum have not been left out: modifications and new construction (particularly of modernist structures) have taken place, and periodic face-lifts also (Osasona et al, 2009). This provides a good ground for tourism and helps to generate income for other developments
- Planning Guidance by regulating new development in the old town area to secure heritage sites from communal demands: New developments are controlled through planning rules so as to preserve the heritage sites in the old town area from encroachment due to urbanization. Modifications are made to the heritage sites and renovation allowed, but, new developments are not encouraged. This is evident in the areas surrounding the *Ile Oduduwa* and the *Ifa Temple* within the city core.

4. Recommendations and Conclusion

Education, awareness and enlightenment should be heightened so as to foster strong identity of citizens with their cultural heritage sites. The Museum as the repository of culture and tradition is in the best position to organize trainings to acquaint people of the community as well as indigenes both home and abroad with the heritage sites and the purposes they serve to help preserve the cultural values from one generation to the other. This can be achieved by organizing workshops and trainings within the local community, and increased publications from the Department of Planning, Research and Publications in the Museum.

Beautification attempts should be increased within the city core by the planning Authorities to encourage and also increase tourism. Gallerias, cinema houses, and more parks should be introduced to attract more people. Also, some heritage sites still lie open with no proper enclosure, one of which is the *Ifa* Temple and thus, the surrounding is unkept with animal feaces littering the area. So also, the entire landscape of the city core is characterized by buildings with old tattered brown roofed buildings and some dilapitating ones. Upgrading and renewal of these buildings will further help to promote a pleasing environment for visitors and likewise add value to the cultural heritages.

To further preserve the cultural heritages situated in Ile-ife, the traditional planning and management tools should be strengthened by the Planning authorities of the town and to curb the increasing effect of urbanization on heritage sites, encroachment into the city core should be prohibited; there should be increase in awareness and publicity of the cultural heritages in the town to inform indigenes, citizens of the country and foreigners of her cultural values to enhance tourism.

The sustainability of the environment is significant in guiding against the resultant effect of a gasping city and in doing this, valuation method comes to play. Valuation in the sense of evaluating the importance and benefits of these city centres and their existing landmarks, the forests and farms that are gradually been taken over by urban sprawl and the environmental hazards that results from improper management. It is worthy of note that rather than leaving these areas to degrade or be wiped off and forgotten due to gentrification effect, a number of benefits springs from the improvement and conservation of these regions such as income generation from tourism and celebration of ethnically symbolic ceremonies which attracts trade and developments and investors. The conservation of heritage places makes an important

contribution to environmental, social and economic sustainability and also helps in regional development.

Heritage landmarks need to be protected because they constitute valuable assets (cultural and environmental capital) within the community. Protecting the cultural identity and heritage of Ile Ife helps to:

- Preserve a sense of history for future generations,
- Enrich new developments,
- Promote community identity,
- Historic landmarks and
- Guide planning activities such as zoning, development control and conservation policies and these helps to shape the rapid expansion of the city.

“Historic preservation or conservation seeks to enhance, preserve and retain the symbols of the past” (Olufemi, 2001:390). Although expansion of the urban environment is inevitable but, in exploiting our environment, there is need to effectively conserve and safeguard it.

References

- Appolos O. I. (2012); A Glimpse into Ife Mythology. Vanguard Newspapers. Sunday 24, February. Vanguard publications
- Cordelia O. Osasona, Lee O. Ogunshakin and David A. Jiboye. Ile-Ife (2009): A Cultural Phenomenon in the Throes of Transformation
- Feilden, Bernard M. and Jokilehto Jukka (1998): Management Guidelines for World Cultural Heritage Sites. Second Edition, Rome, ICCROM.
- Hero Network (2010); Cultural Heritage Integrated Management Plans; thematic report 4. Hero network publications.
- Ife city Museum Records (2013); Inventory of immovable Heritage Resources of Ile-Ife.
- Longstretch, Richard (2008) Cultural Landscapes-Balancing Nature and Heritage Preservation Practice, University of Minnesota Press, 211pp.

Ayangbile O., Abiodun O.; Cultural Heritage Planning; 49th ISOCARP Congress, 2013.

Olufemi, S (2001) "The Management of Cultural Properties", in Agbola, T (ed.) Readings in Urban and Regional Planning, Macmillan, Nigeria, pp.390-399.

Omotoso Eluyemi,(1986). This is Ile- Ife, Adesanmi Print Works (1986).

Osasona, C. O. (2001). "The Ile Nla: A Colonial City Hall in Ile-Ife, Nigeria". African Arts, Vol 34, No 1, pp 78-82.

Osasona, C. O. and Hyland, A. D. C. (2006). Colonial Architecture in Ile-Ife, Nigeria. Bookbuilders Editions Africa, Ibadan.

UN-Habitat (2009) Global Report on Human Settlements: Planning Sustainable Cities, Earthscan, London.

Based on mitigation and adaptation viewpoint in water sensitive city- A case study in land subsidence area in Yunlin, Taiwan

Hsueh-Sheng Chang, National Cheng-Kung University, associate professor in
Department of Urban Planning, Tainan, Taiwan

Tzu-Ling Chen, National Cheng-Kung University, Ph.D student in Department of Urban
Planning, Tainan, Taiwan

Abstract

Excessive urbanization, unbalanced water usage, and land use out of control result in serious planning failures. Urban development has changed land-use coverage directly which affects overall water cycling and eventually leads to flood disaster. A thorough consideration of water balance and spatial planning might become significant urban flood mitigation strategy. Owing to the geographic features and climate condition, we propose to apply water balance concept into a water sensitive city like Taiwan Yunlin, and further construct water safety (without flood), water satisfaction (reasonable ground water withdrawn), and water environment communities. A coupling model of urban water balance on land use change can analyze the relationship between land use development, anthropogenic activities and water cycling, and further simulate different scenarios to propose appropriate land use patterns while achieving water safety, water satisfaction, and water environment communities.

Keywords: water cycling, water balance, spatial planning

1. Introduction

Global climate changes has speed up and strengthen disasters frequencies and scale (Kleinen & Petschel-Held, 2007), such as tsunami in Southeast Asia in 2004 and Japan in 2011. A myriad of planning failures including excessive urbanization, unbalanced water usage, and land use out of control result in the increasing of surface run-off and the change of water cycle. In fact, urban development changes land-use coverage directly which affects overall water cycling and eventually leads to flood disaster (Beighley et al.,2003; Haase et al.,2009). Hence, international organizations, both European Union Framework Programme (EUFP) and World Meteorological Organization (WMP) started to integrate water adaptation approach, water cycle concept and water balance in land use plans. And cities came out various flood managements integrated into comprehensive land uses planning such as water sensitive cities in Australia, living with water and room for the river in Netherland, and making space for water in England.

Taiwan has confronted critical flood resulted from urbanization with a typical imbalanced land use and water environment planning in previous days. Under complicated relationship between land use change and water balance, the issues is required involving various

professional fields such as hydraulic engineering, civil engineering urban planning etc. Risk management, of spatial planning, emphasized that restriction should be worked out in high risk zones such as flood plain area, river buffer zone, and flood tendency area (Coeur & Lang, 2008; Böhm et al., 2004). Hydraulic engineering stressed flood management by utilizing model simulations and facilities location analyses to appraise non-engineering flood mitigation measures (Water Resources Agency, Ministry of Economic Affairs, 2008). In fact, a thorough consideration of various professional fields while practicing water balance might become significant urban flood mitigation strategy (WMO, 2010).

The concept of water balance can be divided into three categories. The 1st category discusses the driving forces of land resource and land use change affected the imbalance on water cycling mechanism, such as precipitation, evapotranspiration, runoff, infiltration etc.(Emmerling and Udelhoven, 2002; Collin and Melloul, 2003; Deal and Schunk, 2004; Haase et al., 2007; 2009). The 2nd category emphasizes the importance of water management in various land uses, such as drinking water, rainwater, waste water (Pauleit et al., 2000, 2005). The 3rd category analyzes water and energy under different climate conditions (Grimmond, 1986; Mitchell, 2004, 2008).

There was various research integrated water balance into land use change simulation, such as Markov Chain Model, Cellular automatic Method, Logistic Regression, Artificial Neural Network (McColl and Aggett, 2007 ; Liu and Seto, 2008 ; Kamusoko et al., 2009 ; Shen et al., 2009). Sivapalan (1996) predicted impacts on hydrologic cycle of deforestation through water balance model in Australia basin. Guo (2002) discussed water sensitivity under global climate change. Bormann (2006) evaluated the effects of under different land use scenarios. A coupling model of urban water balance on land use change can analyze the relationship between land use development, anthropogenic activities and water cycling, and further simulate different scenarios to propose appropriate land use patterns while achieving a water balance land use planning to further knock down negative environmental impacts (Dwyer and Childs, 2004).

This study initially identifies the cause and the consequence of land subsidence and flood disasters in Taiwan Yunlin County, and then uses physiographic inundation-drainage model to forecast flood disaster under various return periods. We are testing flood disasters under diverse scenarios and trying to evaluate the benefit of considering both traditional flood prevention works and land use plan. Ultimately, the integration of water balance model into land use plan is looking forward to mitigate present natural disaster caused by civilization and further reach the equilibrium between urban development and natural environment.

2. Issues identification in study area

Our study area is located in the middle of Taiwan (see Figure 1), and the topography stretches across coast and plain. A general elevation is below 10 m along the west coast area,

and an elevation is below sea level in some specific area in the west-south coast. In the case of champaign, flat terrain results in flood disasters during torrential rain.

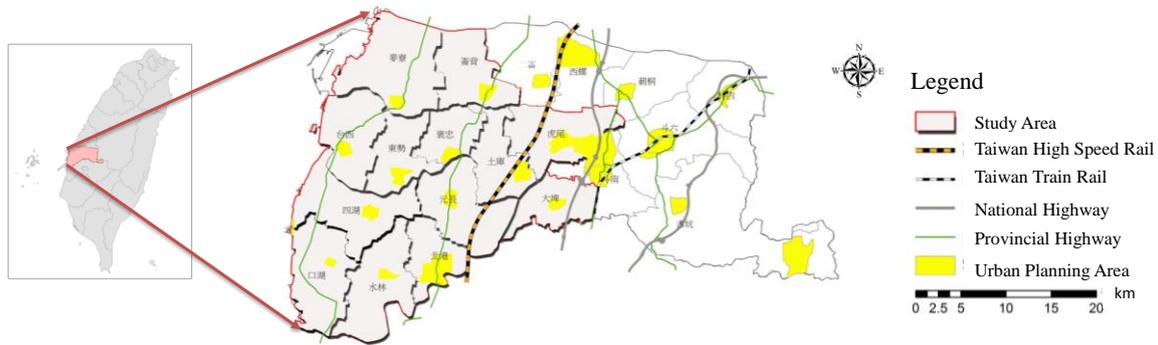


Figure 1: Study area

In addition, the encouragement of rice plantation with inappropriate irrigation systems results in the excess ground water withdrawn. There are over a hundred thousand wells and are mostly used for irrigation. The physical condition and excess ground water withdrawn led serious land subsidence problem. There were two states of land subsidence happened, along coast area and inland area (see Figure 2). In the period of 1992 to 1999, serious land subsidence happened along the west coast. Started from the year of 1996, land subsidence moved into inland area which might affect the operation of Taiwan high speed rail (Taiwan HSR) (see Figure 3).

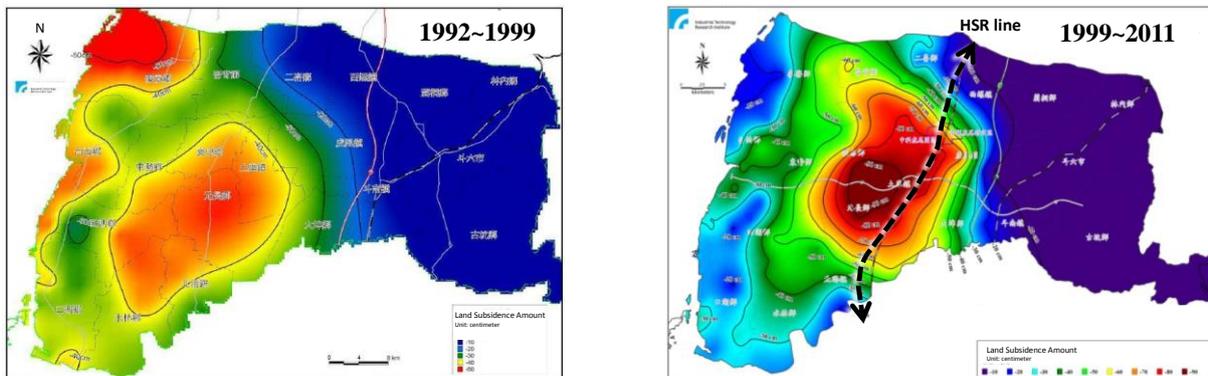


Figure 2: Land subsidence rate comparison between different time period



Figure 3: Land subsidence affected area

The flood investigation results (Council for Economic Planning and Development, 1996) identified various flood risks in our study area, including latent flood area, constantly inundated area, flood sensitive area and so on (see Figure 4). It is likely serious land subsidence with sea level rising under global climate change might result in much serious flood disasters (see Figure 5).

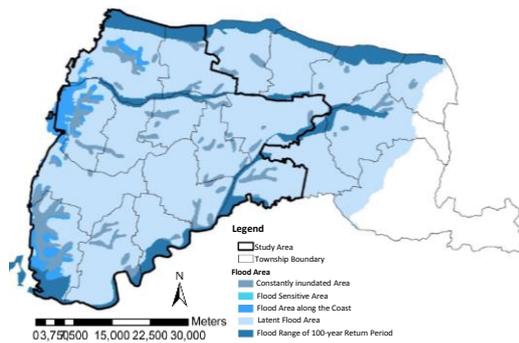


Figure 4: Latent flood area

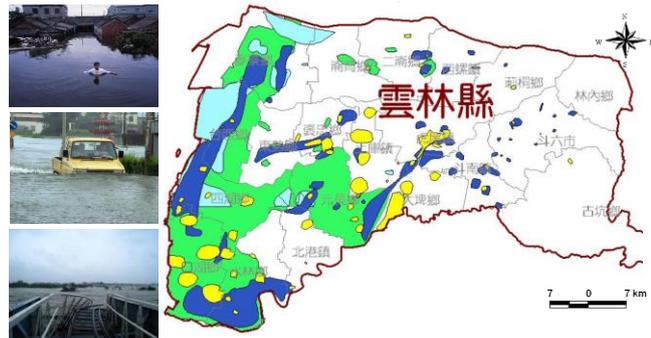


Figure 5: Flood disaster affected area

To radically resolve land subsidence issue in water sensitive city like Taiwan Yunlin, there have been cooperation across sectors in both central and local governments while focusing on distinct professional fields such as spatial planning, regulations, industrial developments, coordination, water engineering and public participation. In fact, not only cross sectional cooperation but the practice in land use management is more momentous. The idea of this paper is to testify the importance of land use plan on flood disasters and further get to the equilibrium of civilization and disasters.

3. Planning concepts in water sensitive area

Our overall framework starts with flood risk simulations and gets forward to proposing land use strategies based on flood simulation results. There are three scenarios (see Figure 6) in our flood simulation process, type A is under similar climate tendency (with land subsidence, sea level rising, wave and rainfall change) without any flood prevention works, type B is under traditional flood prevention works and type C is land use plan with water balance concepts such as fallow farmland and wetland as reservoirs and multi-purpose floodwater facility.

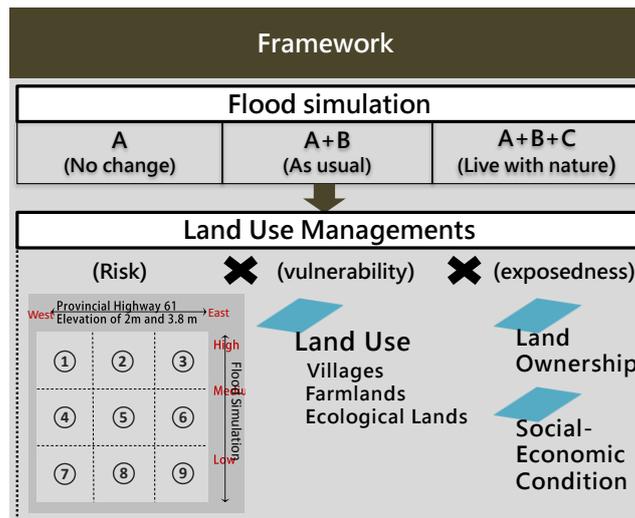


Figure 6: Research framework

3.1 Flood simulation framework

We apply physiographic inundation-drainage model to simulate flood disasters based on irregular grids (grids are divided according to roads and river). Digital elevation model, soil map, land use map, river basin and road system maps are inputs in our flood model, together with future climate change impacts on sea level and rainfall (see Figure 7).

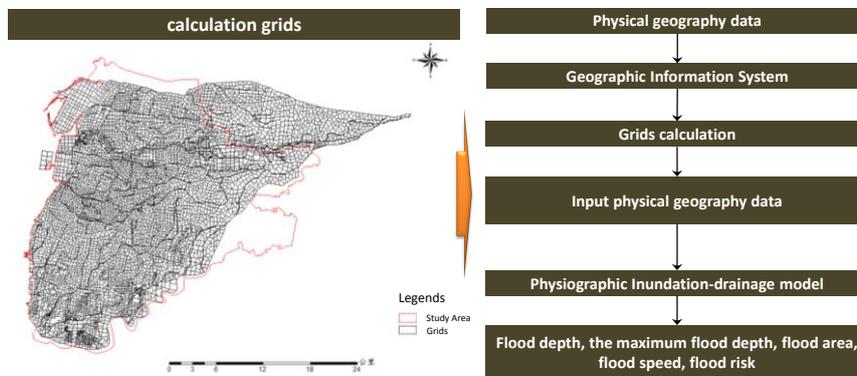


Figure 7: Calculation procedure

In the 1st scenario, we forecast climate change impacts based on historical records of land subsidence, rainfall and sea level in the beginning. We then simulate flood risks according to land subsidence amount in 2038 (see Figure 8), rainfall forecast (see Figure 9) and sea water level forecast (see Figure 10).

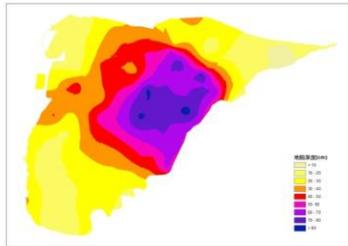


Figure 8: 2038 land subsidence amount

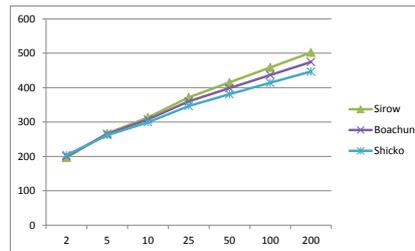


Figure 9: Rainfall forecast in various return period

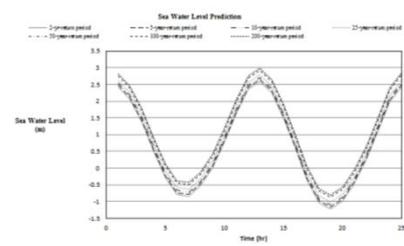


Figure 10: Sea water level prediction

In the 2nd scenario, traditional engineering flood prevention works (see Figure 11) such as drainage, dikes, pumping stations and detentions under various status (operation, under construction or planning) have been included.

In the 3rd scenario, we designate fallow farmlands and wetlands as multipurpose reservoirs (see Figure 12). Since the depth of fallow farmlands and wetlands is different from traditional reservoirs, so we here assume the capacity of fallow farmlands and wetlands are 70% off for flood water storing.

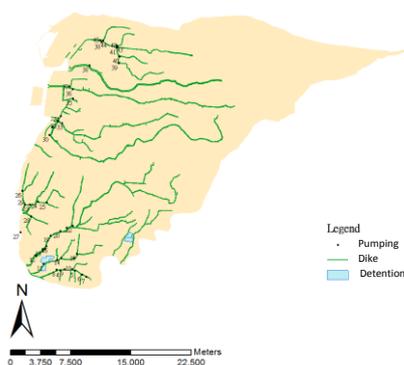


Figure 11: Traditional flood prevention works

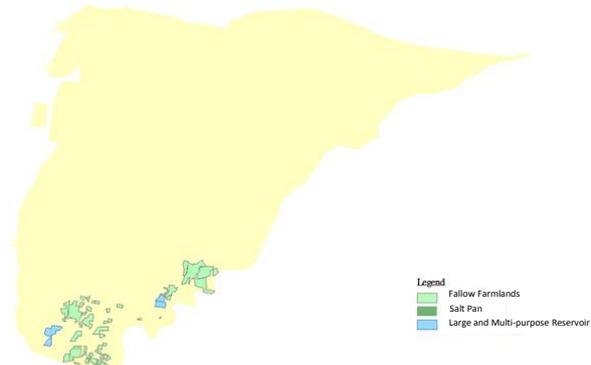


Figure 12: Land use plan with water balance concepts

3.2 Land use adjustments

We then base on elevation of 2m, provincial highway 61 (average height is 3 or 4 m) and 3.8m (the boundaries have been defined by central government based on land subsidence rate and sea level, and have been referred to other research projects in Taiwan), and flood simulation results (the results can be divided into 3 categories, high risk, medium risk and low risk) to propose land use adjustment strategies (See Figure 13).

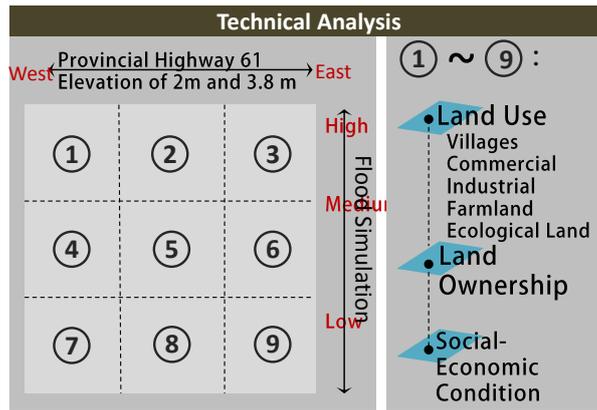


Figure 13: Land use adjustment framework

4. Result

4.1 Flood Simulation Results

Comparing to the 1st scenario (see Figure 14) and the 2nd scenario (see Figure 15), traditional flood prevention works are able to mitigate flood slightly under flood range of 5-, 10-, 25-year return periods for those engineering works came out mostly based on flood range of 50-, 100-, 200-year return periods. Therefore, our study area in southern west part has the most obvious mitigation benefit by constructing dikes, pumping stations and other traditional flood preventions works.

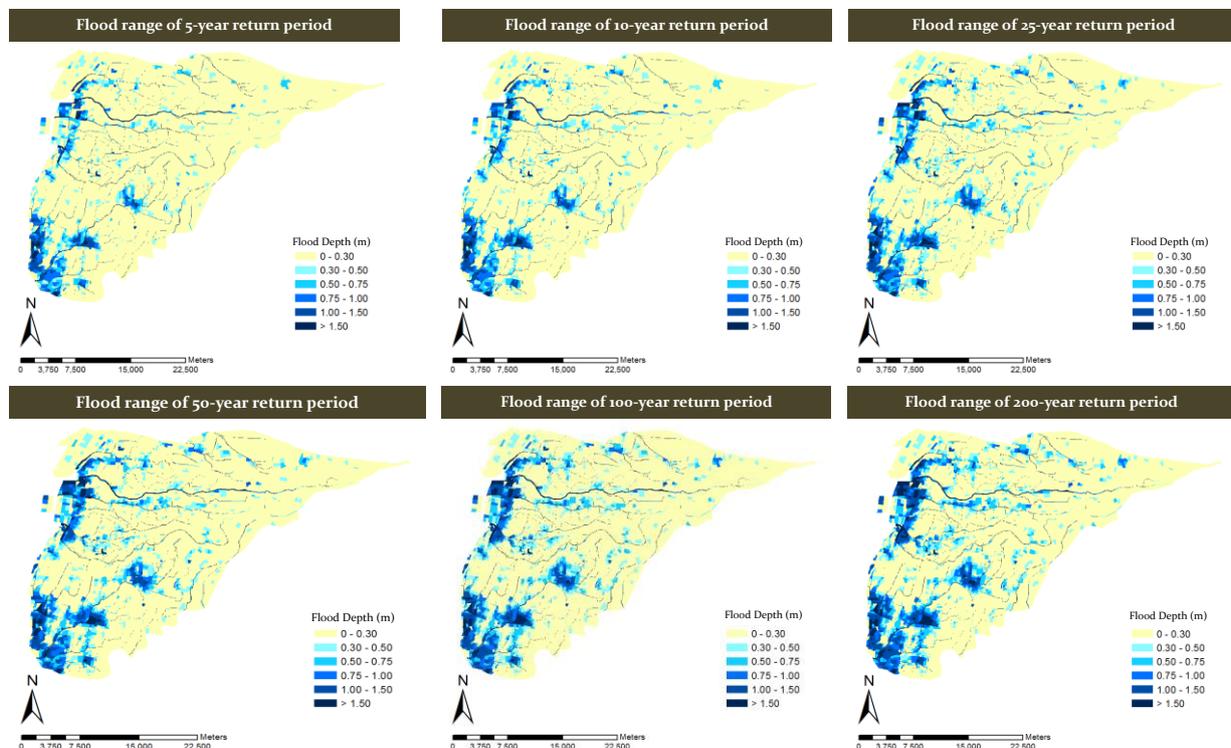


Figure 14: Flood range of various year return period under 1st scenario

Comparing to the 2nd scenario and the 3rd scenario (the integration of existing and planning traditional flood prevention works and other adaptive land use for detention) (see Figure 16), flood disasters have been improved conspicuously along the west coast under flood range of 5-, 10-, 25-year return periods for there are large amount wetlands. In addition, in inland area and upper stream region, we propose fallow farmlands as multipurpose reservoirs. Hence, flood disaster area is able to improve both along the coast and inland area under flood range of 50-, 100-, 200- return periods.

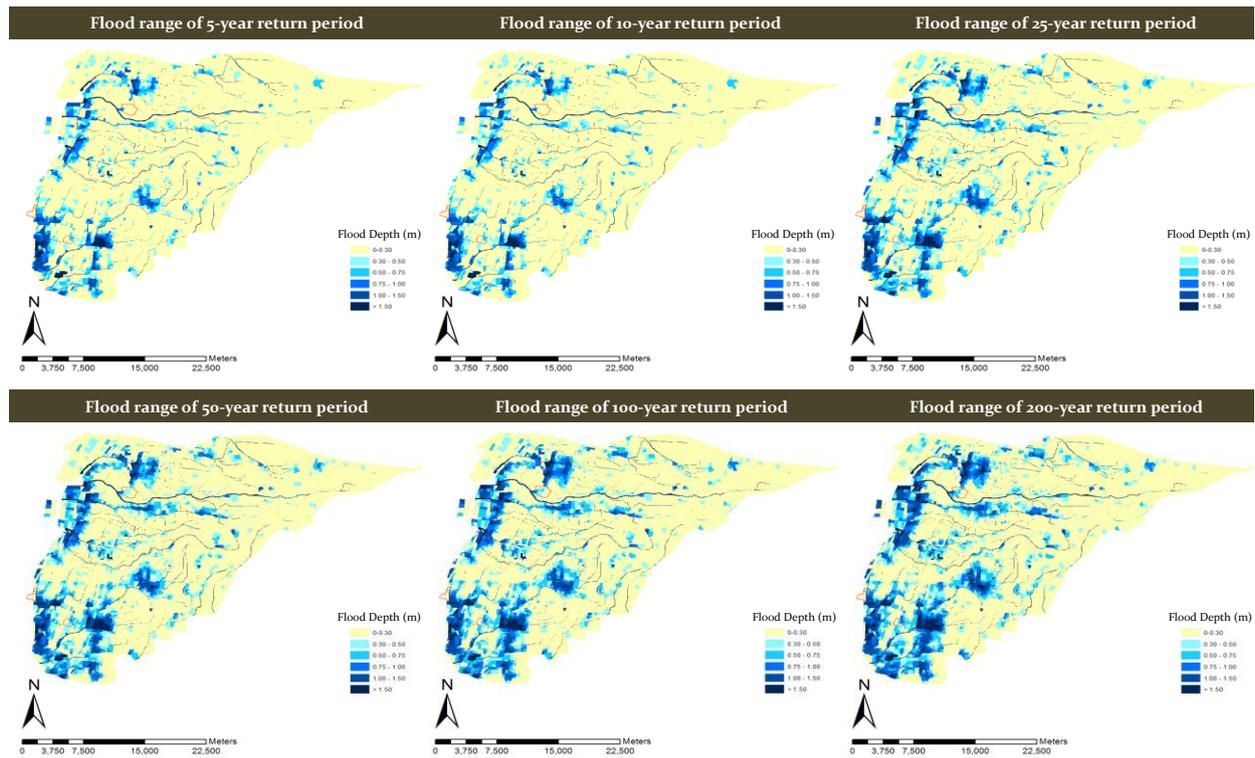


Figure 15: Flood range of various year return period under the 2nd scenario

Although areas along west coast have serious flood disasters under different scenarios, land use plan with water balance concepts indeed improve flood risks. Multipurpose reservoirs at fallow farmlands and wetlands are preliminary variables for now. We will then consider other potential land use types as flood detention purpose in later stages.

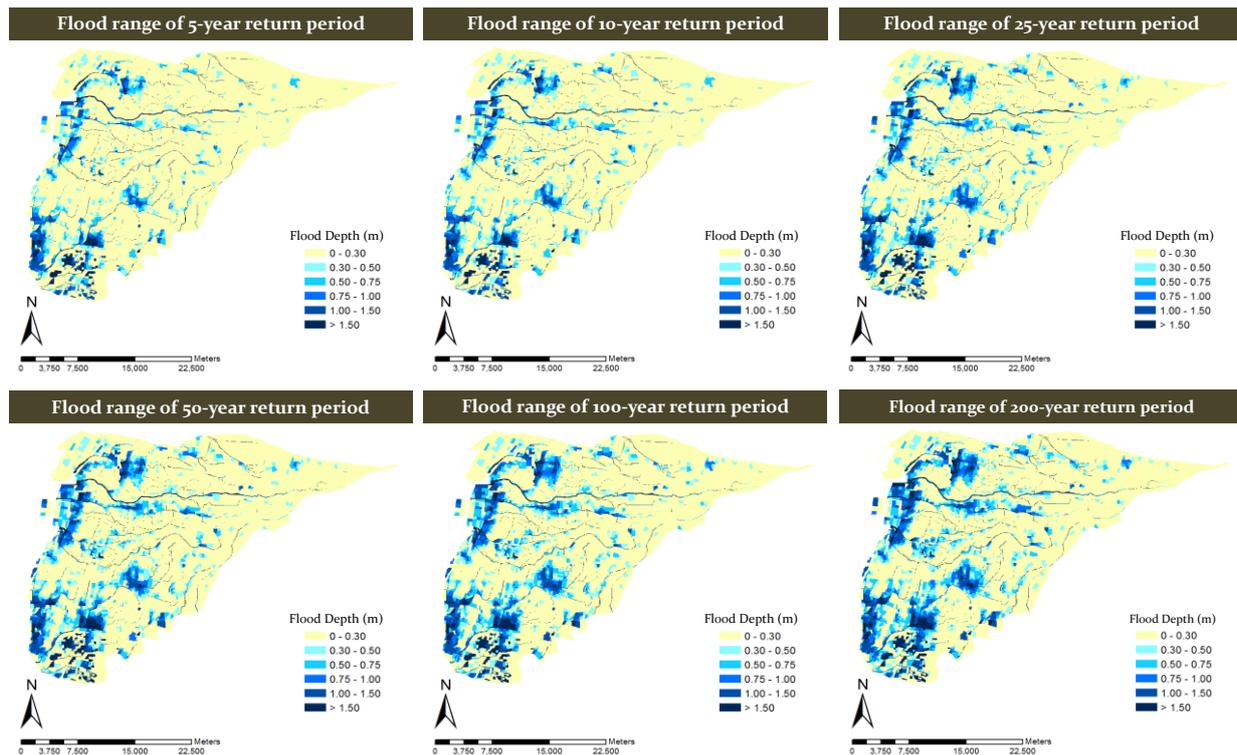


Figure 16: Flood range of various year return period under the 3rd scenario

4.2 Land use adjustment

In figure 17, we have separate buffer zones according to the elevations, including zone I, zone II and zone III. Zone I is the west of Provincial Highway 61 and elevation of 2m. The west boundaries of zone II are Provincial Highway 61 and elevation of 2m, and the east boundary of zone II is elevation of 3.8m. Zone III is the east of elevation of 3.8m.

Owing to various land use types in the study area, public properties are top priority for land adjustment strategy in this planning phase. Figure 18 indicates that the north and the south coast has relative higher flood risks, so public properties, fallow farmlands and wetlands have to become flood detentions. Other land use types such as residential, commercial and industrial have to integrate advanced construction techniques such as stilt houses and floating buildings.

Figure 19 indicates flood risks might happen in relative lower area especially in the south area in zone II. Lower land area have similar land use adjustment strategies to zone I by integrating advanced construction techniques. Other public properties have to be top priority for village move from zone I.

Figure 20 indicates zone III is relative low flood risk area comparing to zone I and zone II. However, public properties have to be top priority for flood retention in upstream region, and adequate flood water drainage system is necessary as well.

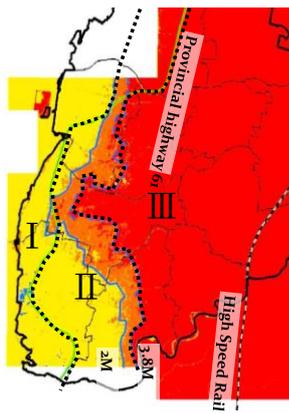


Figure 17: Buffer zones

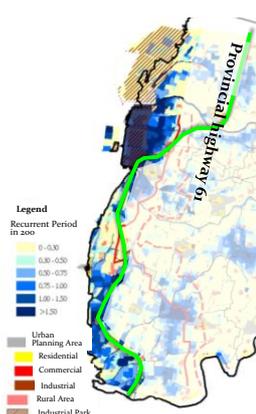


Figure 18: Zone I

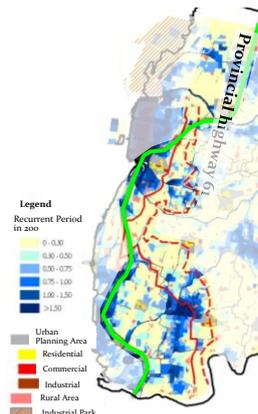


Figure 19: Zone II

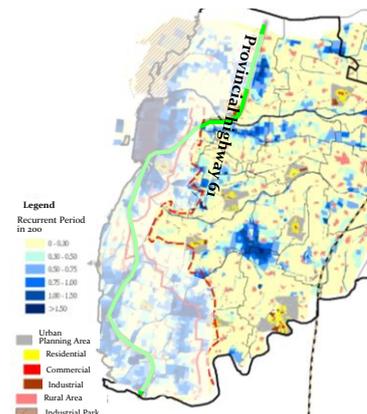


Figure 20: Zone III

5. Conclusion

Coupling with serious land subsidence and flood disasters, we attempt to base on water balance concept and scenario simulation techniques to clarify the urgency and timeliness of various policies for overall land use adaption in such water sensitive city like Yunlin in Taiwan. The integration of land use planning strategies under proper sequence and dynamic land subsidence monitoring system will elaborate flood adaptation and mitigation benefits. Our findings in this stage are as followings:

- A. Based on flood simulation results of applying physiographic inundation-drainage model, traditional flood prevention works are able to mitigate flood slightly under flood range of 5-, 10-, 25-year return periods.
- B. The integration of existing and planning traditional flood prevention works and other adaptive land use for detention are able to improve flood disasters conspicuously along the west coast for there are large amount wetlands.
- C. In the relative higher flood risks zone, public properties, fallow farmland and wetland are top priorities to become flood detentions. Land use adjustment strategies in relative lower area should integrate advanced construction techniques to mitigate property loss during flood disasters. Flood retention in upstream region and adequate flood water drainage system are necessary in the relative safer zone.

6. Acknowledgements

This work was financially supported by Ministry of the Interior, Yunlin County government and the National Science Council of ROC through grant NSC 101-2410-H-006-112.

Reference

- Beighley, R. E., & Moglen, G. E. (2003). "Adjusting measured peak discharges from an urbanizing watershed to reflect a stationary land use signal". *Water Resources Research*, 39(4),1-10.
- Bohm, H. R., Haupter, B., Heiland, P., & Dapp, K. (2004). "Implementation of flood risk management measures into spatial plans and policies". *River Research and Applications*, 20(3), 255-267.
- Bormann, H. (2006). "Impact of spatial data resolution on simulated catchment water balances and model performance of the multi-scale TOPLATS model". *Hydrology and Earth System Sciences*, 10(2), 165-179.
- Coeur, D., & Lang, M. (2008). "Use of documentary sources on past flood events for flood risk management and land planning". *Comptes Rendus Geoscience*, 340(9-10), 644-650.
- Collin, M. L., & Melloul, A. J. (2003). "Assessing groundwater vulnerability to pollution to promote sustainable urban and rural development". *Journal of Cleaner Production*, 11(7), 727-736.
- Council for Economic Planning and Development. (1996). "Environmental sensitive area land use plan and management".
- Deal, B., & Schunk, D. (2004). "Spatial dynamic modeling and urban land use transformation: a simulation approach to assessing the costs of urban sprawl". *Ecological Economics*, 51(1-2), 79-95.
- Dwyer, J. F., & Childs, G. M. (2004). "Movement of people across the landscape: a blurring of distinctions between areas, interests, and issues affecting natural resource management". *Landscape and Urban Planning*, 69(2-3), 153-164.
- Emmerling, C. & Udelhoven, T. (2002). "Discriminating factors of the spatial variability of soil quality parameters at landscape-scale". *Journal of Plant Nutrition and Soil Science-Zeitschrift Fur Pflanzenernahrung Und Bodenkunde*, 165(6), 706-712.
- Grimmond, C. S. B., Oke, T. R., & Steyn, D. G. (1986). "Urban Water-balance.1.A Model for Daily Totals". *Water Resources Research*, 22(10), 1397-1403.
- Guo, S. L., Wang, J. X., Xiong, L. H., Ying, A. W., & Li, D. F. (2002). "A macro-scale and semi-distributed monthly water balance model to predict climate change impacts in China". *Journal of Hydrology*, 268(1-4), 1-15.
- Haase, D. (2009). "Effects of urbanisation on the water balance - A long-term trajectory". *Environmental Impact Assessment Review*, 29(4), 211-219.
- Haase, D., & Nuisl, H. (2007). "Does urban sprawl drive changes in the water balance and policy? The case of Leipzig (Germany) 1870-2003". *Landscape and Urban Planning*, 80(1-2), 1-13.
- Kamusoko, C., Aniya, M., Adi, B., & Manjoro, M. (2009). "Rural sustainability under threat in Zimbabwe - Simulation of future land use/cover changes in the Bindura district based on the Markov-cellular automata model". *Applied Geography*,29(3), 435-447.

- Kleinen, T. and Petschel-Held, G. (2007). "Integrated assessment of changes in flooding probabilities due to climate change". *Climatic Change*, 81 (3-4), 283-312.
- Krause, S., Jacobs, J., & Bronstert, A. (2007). "Modelling the impacts of land-use and drainage density on the water balance of a lowland-floodplain landscape in northeast Germany". *Ecological Modelling*, 200(3-4), 475-492.
- Liu, W. G., & Seto, K. C. (2008). "Using the ART-MMAP neural network to model and predict urban growth: a spatiotemporal data mining approach". *Environment and Planning B-Planning & Design*, 35(2), 296-317.
- McColl, C., & Aggett, G. (2007). "Land-use forecasting and hydrologic model integration for improved land-use decision support". *Journal of Environmental Management*, 84(4), 494-512.
- Mitchell, V. G., Cleugh, H. A., Grimmond, C. S. B., & Xu, J. (2008). "Linking urban water balance and energy balance models to analyse urban design options". *Hydrological Processes*, 22(16), 2891-2900.
- Pauleit, S., & Duhme, F. (2000). "Assessing the environmental performance of land cover types for urban planning". *Landscape and Urban Planning*, 52(1), 1-20.
- Pauleit, S., Ennos, R., & Golding, Y. (2005). "Modeling the environmental impacts of urban land use and land cover change - a study in Merseyside, UK". *Landscape and Urban Planning*, 71(2-4), 295-310.
- Shen, Z. J., Kawakami, M., & Kawamura, I. (2009). "Geosimulation model using geographic automata for simulating land-use patterns in urban partitions". *Environment and Planning B-Planning & Design*, 36(5), 802-823.
- Sivapalan, M., Ruprecht, J. K., & Viney, N. R. (1996). "Water and salt balance modelling to predict the effects of land-use changes in forested catchments .1. Small catchment water balance model". *Hydrological Processes*, 10(3), 393-411.
- Water Resources Agency, Ministry of Economic Affairs. (2008). "Review on the design criteria for hydraulic structures". Taipei (Taiwan): Water Resources Agency.
- WMO. (2010) *The Role of Land-use Planning in Flood Management*.

Whether Supply Side Housing Assistance Program Is Efficient In Helping Over Come Spatial Mismatch

Comparison Of Low Income Housing Tax Credit Program With Rental Housing

**Xu CHEN,
Tianjin Urban Planning and Design Institute, China
ID Number: 78**

Reviewer Comments:

- **Reviewer 39: A comparative study only and tenuously related to the track theme but potentially informative even if the author seems, so far, to be adding little that is original.**
- **NOTE ALSO unintended duplication of abstract's wording in the document as circulated.**
- **Reviewer 40: Comprehensive study on an assessment method of phenomena called 'spatial mismatch'. The paper itself requires some more structuring, it is difficult to read, there seem to be too many repetitions. The posed problem is very narrow, some background would be welcome. Another solution to the problem, possible to enhance by urban planning, would be introduction of some enterprises to the downtown, without relocation of excluded groups.**

Table

1. Abstract.....	3
2. Introduction	3
3. Literature Review & hypothesis	4
3.1. Spatial Mismatch Hypothesis.....	4
3.2. Housing assistance programs.....	6
3.3. LIHTC program	8
3.4. Rental Housing.....	9
4. Methodology.....	10
4.1. Data and Definition of Variables.....	10
4.2. Study Area	11
4.3. Data Collection and Comparison	13
4.3.1 Employment data:.....	13
4.3.2 Low-income housing tax credit program data.....	13
4.3.3 The rental housing data.....	14
5. Text.....	15
5.1 How does LIHTC work.....	15
5.2 Why testing the spatial mismatch on LIHTC and rental housing is important.....	17
5.3 Calculation.....	18
5.4 Result Comparison	20
5.5 Explanation & Recommendation.....	21
References.....	22
Appendix:	23

1. Abstract

When low-income jobs move outside of the city and low-skill workers still stay in the center of the city, there is a spatial mismatch. The Spatial Mismatch Hypothesis is testing whether the low-skilled workers have access to low-income jobs as urbanization takes place. It has been tested for different dimensions for 40 years, and the U.S. government has used some policies to eliminate the separation of low-income jobs and housing. Although no housing policy was specifically aimed at eliminating the spatial mismatch, it is possible that the Low-Income Housing Tax Credit Program (LIHTC) has had some positive effect on the issue. The program gives credit to developers with the aim of providing affordable housing. This thesis is testing the effectiveness of the program in overcoming spatial mismatch, and comparing one supply side housing program - LIHTC program - with demand side housing program - rental housing. This paper aims to give suggestions and assessments on whether the LIHTC program is efficient than rental housing and whether it is worth working on with the goal of eliminating the spatial mismatch.

The hypothesis for this study is that the LIHTC program is more effective than rental housing in overcoming spatial mismatch, since the LIHTC program not only gives its recipients freedom to choose where to live and also makes it easier to approach low income jobs. The LIHTC is the only housing program with nearly 100 percent occupancy, and is also the second largest supply side housing program among all HUD housing programs.

2. Introduction

This thesis examines whether LIHTC is efficient in overcoming the spatial mismatch. It reviews the study of housing assistance programs and using the Index of Dissimilarity as a metric to determine how the programs work. This paper is not trying to prove the Spatial Mismatch Hypothesis, but to assess the housing assistance programs. It is comparing people in different areas who are assisted by LIHTC and those who live in rental housing to see how they access jobs, especially low income jobs. The thesis will also give a sense of how those people have been separated from low-income jobs. Although the Spatial Mismatch Hypothesis is mainly testing how African Americans are segregated from Caucasians, this work only tests how housing units and job needs are segregated.

The methodology I used for measuring the effectiveness of eliminating spatial mismatch is the Index of Dissimilarity, which is the measurement of two groups distributed across a geographic area. The study area is the New York Metropolitan area, since this area is well known as being challenged to provide housing for its large urban population. In the text part, I will give detailed information on how the study area is defined, how the data has been collected and how the calculations have been done.

Firstly, the article gives a review of the Spatial Mismatch Hypothesis. In the past, the Hypothesis has been tested in many studies and also by different models. Those empirical studies have tested different dimensions of the Spatial Mismatch Hypothesis (Ihlandfeldt and Sjoquist, 1998). Those findings and studies have proved the spatial mismatch hypothesis. Spatial mismatch itself is an economic and sociological phenomenon associated with the segregation between low income jobs and low skilled workers, so this work is testing the employment opportunities of

low skilled people and where they live.

Secondly, the article reviews housing programs that are implemented by United States Department of Housing and Urban Development. Among all the housing programs, the LIHTC program has been one of the most important programs providing affordable rental housing in the United States, because of its high occupancy among all housing programs since its inception (from HUD website). It was created by the Tax Reform Act of 1986 as an alternate method of funding housing for low- and moderate-income households, and has been in operation since 1987. But it has been argued that the program serves low-income households poorly. So this article tests the spatial relationship of recipients of the LIHTC program and low-income jobs and compare it with the spatial relationship of rental housing household and low-income jobs. The hypothesis here assumes that LIHTC spatially matches low-income jobs better than rental housing.

Thirdly, rental housing is the one of the major ways of providing affordable housing for low income workers and rent is an important variable when calculating the Consumer Price Index (CPI) since it includes rent of primary residence and owners' equivalent to rent in housing price. The generally accepted definition of affordability of housing is for a household to pay no more than 30 percent of its annual income on housing. So, families who pay more than 30 percent are considered cost-burdened, because they may have difficulty affording necessities, such as food, clothing, transportation and medical care. The article will examine 30%, 50% and 80% of Average Area Median Household Income (AMI) groups. In the rental housing part, the article compares the index of rental housing of each percentage group.

Finally, at the end of the article, a comparison of the three Indexes of Dissimilarity of rental housing and Index of Dissimilarity of the LIHTC program has been compiled in a table and a conclusion will be drawn on the effectiveness and efficiency in eliminating spatial mismatch of the LIHTC program as compared to those of the three rental housing percentage groups.

3. Literature Review & hypothesis

3.1. Spatial Mismatch Hypothesis

Spatial mismatch is the sociological, economic and political phenomenon associated an economic restructuring in which employment opportunities for low-income people are located far away from where they live. In the United States, this takes the form of high concentrations of poverty in central cities, with low-wage, low-skill employment opportunities concentrated in the suburbs.

John F. Kain first came up with the idea of the Spatial Mismatch Hypothesis (SMH) in 1968. The idea of SMH is that jobs are decentralized from the urban center, but urban workers, especially minorities, such as black and Latinos, are left in the centre of the city and they do not have easy access to employment. In his article 'Housing Segregation, African American Employment, and Metropolitan Decentralization', he investigated the relationship of housing market segregation and the distribution of non-white employment. He has three hypotheses, which have been proved by the method of home interviews and surveys in the Detroit and Chicago Areas. From his article, we learn that the experience of African Americans has been remarkably different

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch49th ISOCARP Congress 2013

from that of other ethnic and racial groups in this respect. Stanley Lieberman has shown that African Americans are far more segregated than any other ethnic or racial group in American cities and that while segregation of immigrants and other groups has generally declined; the segregation of African Americans has increased over time.ⁱ In his article, at first, he gave the four most obvious reasons why housing market segregation is affecting the distribution of African American employment. (1) The distance factor, which will impose costs to African Americans. (2) Lacking of employment information from the job areas. (3) Possible discrimination in the job area against job seeking African Americans. (4) Possible self segregation by ghetto area people. And then he tests the hypothesis by using Chicago and Detroit as examples. He proved that the location of African Americans' jobs strongly affects the distribution of African American residences.ⁱⁱ He also examines the occupational groups of African Americans and their work and residence locations. He found that African American ghettos are typically located in the most central part of cities and expand only at their peripheries.ⁱⁱⁱ He came to the conclusion that housing market segregation clearly affects the distribution of African American employment.^{iv} His conclusion is supported by the data obtained from the Chicago and Detroit metropolitan areas. One year later, a paper "Housing Segregation, Negro Employment and Metropolitan Decentralization: An Alternative Perspective" by Joseph D. Mooney was published in the same journal. In his article, Mooney used a different model testing the same hypothesis. He examines the 25 largest standard metropolitan Statistical areas. He used a coefficient to measure the relationship between employment and population. He came to two major conclusions. Firstly, the locations where people live and the locations of job opportunities are closely connected. Secondly, the growing employment sectors in the central cities are largely for female employees.^v Almost thirty years later, in 1992, John F. Kain himself published a paper, "The Spatial Mismatch Hypothesis: Three Decades Later", which includes a comprehensive scholarly literature review for the spatial Mismatch Hypothesis, which deals with the effect of housing market discrimination on the employment of African Americans. In this paper he reviews the history of SMH and the arguments about his paper because of the problems that happened in ghetto areas, such as civil disorder. The government's reaction to the social disorder made this issue of spatial mismatch hypothesis widely recognized and it received extensive attention. There were several opponents and supporters during this three-decade period during which the hypothesis was hotly contested. The hypothesis was first rejected by two economists Ellwood and Leonard. Afterwards, Kain argued with them, because they rejected the spatial mismatch hypothesis on the ground of the different definition of coefficient variables in his 1974 paper, regarding the levels of racial segregation. Wilson's book, *The Truly Disadvantaged* (1987), helped to rekindle this dispute by attributing at least part of the employment problems of inner-city blacks to the suburbanization of industry and employment. (1991, p. 105). Kain analyzed the weakness of the opposition arguments about their models and coefficient of variables.

Most new employment opportunities do not occur in central cities, near all-African American neighborhoods. They are being created in suburbs and outlying areas—and this trend is likely to continue indefinitely. New office buildings have risen in the downtown of large cities, often near all-African American areas. But the outflow of manufacturing and retailing facilities normally offsets this addition significantly—and in many cases has caused a net loss of jobs in central cities.^{vi} After Kain's review, there were more than two dozen new studies on the spatial mismatch issue. Keith R. Ihlanfeldt and David L. Sjoquist gave a review of these studies.

There are also some other brilliant articles after the 30-year debate. In Michael A. Stoll's article, 'Within Cities and Suburbs: Racial Residential Concentration and the Spatial Distribution of

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

Employment Opportunities across Sub-Metropolitan Areas', he indicates that less-educated people, public assistance recipients and poor minorities mostly reside in areas that are heavily populated by similar people, but the less-skilled and entry level jobs are in the suburb of metropolitan areas which are not easily accessed by public transit. This is Spatial Mismatch. He tested this hypothesis by examining Atlanta, Boston, Detroit, and Los Angeles, which represent the four different regional metropolitan types, since each has its own central city/ suburban dichotomy. His gave a great example of his data gathering and analysis method of testing the connection of jobs and people. The author recommended two possible results to increase central-city minority residents access to jobs. One is to give minorities more opportunity to live in suburban housing. The other is to subsidize commuters and commuting.

Another paper in this field is "The Mechanisms of Spatial Mismatch". This article is mainly about the factors that cause the spatial mismatch. The first part of the report shows how the jobs been suburbanized. The report argues that in most U.S. cities, the proportion of jobs located in the central cities decreased largely. For example, in 1980 the proportion of jobs located in the central cities was 57%, but in 2000, the proportion decreased to 47%. A number of factors caused this steady decrease: 1. Higher growth rate of jobs in suburbs than in the central city. 2. The rapid pace of suburbanization.

The second part of the report is about the disconnection of the minorities from jobs. The author, using statistics, strongly supports his assertion about blacks remaining in the city during suburbanization. Although the causes of the segregation are diverse, the author gives a direct explanation for the reasons: sheer racial discrimination and housing-market discrimination.

Besides the tests for the spatial mismatch the author made, he also gives 7 underlying mechanisms of spatial mismatch. They are (i) Workers may refuse a job that involves commutes that are too long because commuting to that job would be too costly in view of the proposed wage. (ii) Workers' job search efficiency may decrease with distance to jobs. In other words, for a given search effort, workers who live far away from jobs have fewer chances to find a job because, for instance, they get less information on distant job opportunities. (iii) Workers residing far away from jobs may not search intensively. For instance, when housing prices decrease with distance to jobs, distant workers may feel less pressured to search for a job in order to pay their rent. (iv) Workers may incur high search costs that cause them to restrict their spatial search horizon at the vicinity of their neighborhood. (v) Employers may discriminate against residentially segregated workers because of the stigma or prejudice associated with their residential location (redlining). In particular, suburban employers may consider that, on average, inner city residents have bad work habits or are more likely to be criminals (statistical discrimination). (vi) Employers may refuse to hire or prefer to pay lower wages to distant workers because commuting long distances makes them less productive (they are more tired or more likely to be absent). (vii) Suburban employers may think that their white local customers are unwilling to have contacts with minority workers. They thus discriminate against minority workers (customer discrimination) and in particular against those located in the central city. At the end of the article, the author also gave recommendations on different policy making.

To conclude, all the previous works give a detailed analysis of mechanisms by which spatial mismatch exists and why it exists but seldom mention the relationship with housing programs.

3.2. Housing assistance programs

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch
 49th ISOCARP Congress 2013

Schwartz’s book gave an overall view on the housing programs. In his book, he introduced key concepts and institutes and examines the most important programs, and also includes empirical data concerning program evaluations, government documents, and studies carried out by the author and other scholars. The book worked well as an introductory level text. The first chapter is mainly about the US housing policy, including the current basic trends and problems, the housing finance system, and the role of the federal tax system in subsidizing homeowner and rental housing. The middle chapters focus on subsidy programs one by one. The closing chapters discuss issues and programs that do not necessarily involve subsidies, including homeownership, mixed-income housing, and governmental efforts to improve access to housing by reducing discriminatory barriers in the housing and mortgage markets. These chapters also offer reflections on future directions of U.S. housing policy.

“The federal government provides subsidies for low-income households in three basic ways: (1) supporting the construction and operation of specific housing development; (2) helping renters pay for privately owned housing; and (3) providing states and localities with funds to develop their programs.”^{vii} According to Schwartz’s book, the housing programs basically can be divided into two categories in the United States; one is supply side assistance, another is demand side assistance. The project-based or supply-side housing subsidies include federal level and local level. The federal government can either give money to state and local government for them to decide what forms of subsidy they want to use, or give money to developers to construct the public housing or operate privately owned housing instead.

From the supply side, public housing or government-subsidized housing programs have been built either by federal government or by nonprofit and private companies which are subsidized by government or by any forms of project based subsidies. In this category, job seekers have to live in the subsidized programs when they receive the subsidies, which greatly limits their approachability to low income jobs, since most of those who have been subsidized have no personal vehicle and have to use public transit to commute. Low-income housing is a typical example of this category. From the demand side, government issues vouchers or other tax deduction methods to help recipients of demand side housing programs with their financial burden or to enable low-income households to obtain housing that already exists in the private market.

Most Low-income households receive assistance through the following methods (Table 1). It can be seen that the Rental Voucher program, Public Housing and other Project-based subsidies are three main types of assistance that the federal government uses and have been assessed many times. The LIHTC program is one of the major methods for government to assist low-income workers that have not been much assessed.

Table 1: Overview of Federally subsidized Rental Housing

Program (year)	Total Units	Percentage of Total
Rental Vouchers	1803013	26%
Public Housing	1220937	18%
Other Project-based subsidies	1999545	29%

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch
 49th ISOCARP Congress 2013

Deep Subsidy Programs	1709808	25%
Shallow Subsidy Programs	289737	4%
Low-income Housing tax Credits	908563	13%
Tax-Exempt Bond Financing	850000	12%
Home Funding	113553	2%
Total	6895611	100%

Data Source: Vouchers, public housing: HUD, 2004; Other Project-based Subsidies: National Housing Trust, 2004a, ICF Consulting Team, 2005, and Millennial Housing Commission, 2002; Low-income Housing tax credits: HUD, 2004; Tax-exempt bonds: National Council of State Housing Finance Agencies, 2004, HOME: National Council of State Housing Finance Agencies, 2005

Table Source: Alex F. Schwartz (2006) Housing Policy in the United States: an introduction. Routledge, Tylor & Francis Froup, LLC P. 8

3.3. LIHTC program

The LIHTC program was created as an alternate method of funding housing for low- and moderate-income households. The LIHTC system, has been operated since 1987 and is very success in that it has generated many rental-housing units which are now occupied by low- and moderate-income households. However, many argue that the program is overly complex and poorly designed to serve the needs of low-income households (Stegman 1991). There are several significant articles about LIHTC, but none of them have analyzed the program in terms of eliminating spatial mismatch. Some of the related works evaluate how the program works. One of the most cited articles is ‘The LIHTC: an analysis of the first ten years’ by Jean L. Cummings and Denise DiPasquale. In this article, the author analyzes the cost of the projects, who they serve, where they are built and their financial viability by analyzing the 2544 LIHTC projects, which covered the entire history of the program. Before this article, there was very little detailed historical information on the characteristics and performance of the LIHTC. Although this article provides analysis very well about the program in 5 key areas: total development cost, source of financing, operating income and expenses, returns to equity and debt investors, and total subsidies provided, it has nothing to do with the elimination of spatial mismatch.

There are several inspiring articles by Professor Freeman related to LIHTC program. One of the articles mentioned that the percentage of African American in a neighborhood was a relatively strong predictor of the siting of LIHTC developments^{viii}. The article shows the relationship between concentrations of Latino and Asian residents and siting of assisted housing. At another article, ‘Comment on Kirk McClure’s “The Low-Income Housing Tax Credit Program Goes Mainstream and Moves to the Suburbs”’, he argues that LIHTC program is well suited to

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

the peculiar circumstance of U.S. in terms of unambitious nature of its objectives, although some other argues that the program is fundamentally flawed. Another article 'Subsidized Housing and Neighborhood Racial Transition: An Empirical Investigation' By Professor Freeman indicates that there is no consistent relationship between assisted housing and racial transition in surrounding neighborhoods.

Another article, which examines how the LIHTC program works, is by Kirk McClure, of University of Kansas. His article "The Low-Income Housing Tax Credit as an Aid to Housing Finance: How Well Has It Worked?" was written when the program had been operating for 10 years. The article mainly deals with the program's financing problems, and controversy about whether the program mainly helps low-income households. In the first part of the article, the author gives a detailed review of how the program works, including the selection process and implementation process of projects. Then he gives the figures showing the program's performance, which show that the program has worked really well since its inception. The article also examines the construction types and market locations of LIHTC properties. The author finds that LIHTC projects are mostly located in areas with poor households, but little is known about the households besides their income. At the end the author comes to the conclusion that the program gives developers too much benefit and that this program and its tax credit are an inefficient subsidy system.

Some other inspiring research on LIHTC program include William S. Hettinger's "Low Income Housing Tax Credits: Strategies for Year 15" and most recently "Housing Choice Vouchers, the LIHTC, and the Federal Poverty Deconcentration Goal" by Anne R. Williamson of The University of Texas at San Antonio. Some of the research mentions the spatial character or analyzes the spatial distribution in certain areas, such as 'Spatial Analysis of the LIHTC Developments in Cuyahoga County' by David M. Brown of University of Cincinnati. Some are research on the market price or evaluations of whether builders get too much benefit. None of this research is about the spatial mismatch of jobs and units located.

3.4. Rental Housing

Rental housing is the major source of housing but there is not any specific research on the relationship of rental housing and low-income jobs. One of the most significant research on rental housing is "Rethinking rental housing" by John Gilderbloom, in which the author provides an attempt to justify state intervention in rental markets, and a more technocratic list of solutions to increases in rent during the 1970s. Although the book has nothing to do with the spatial mismatch of jobs, it is an exhaustive and penetrating study on rental housing policy and history. At the end of the book, the author proposes a variety of less obviously controversial fixes.

Among the variety of studies, there is basically no study on the spatial mismatch of LIHTC program and employment, and the spatial relationship of rental housing with employment. The most related studies are about how residence affects employment, such as Scott W. Allard and Sheldon Danziger's "How Residence and Race Affect the Employment of Welfare Recipients" published in September 2000.

4. Methodology

4.1. Data and Definition of Variables

Index of Dissimilarity is using to measure the relationship of housing units and low-income jobs in this article. There will be four Indexes of Dissimilarity for units of rental housing and low-income jobs. The first Index of Dissimilarity will show the relationship of units of LIHTC projects and low-income jobs; the second Index of Dissimilarity will show the relationship of units of rental housing and low-income jobs. The second category includes three different household income levels. The first group is the household which earns 30% of the Average Area Household Income (AMI), and the other two groups are households which earn 50% of AMI and 80% of AMI. The Index of Dissimilarity is one of the most common measures for assessing the separation of two groups.

The Index of Dissimilarity has been used to measure evenness largely. The Index is an indicator of just how much one group is spatially separated from another group. It has been frequently used by population geographers and demographers. One of the usages is in the book *Racism in Contemporary America* by Meyer Weinberg. The Index of Dissimilarity measures the evenness of housing units and low-income/ entry-level jobs in this thesis. The result will show these two groups' distribution across the census tracts within the New York metropolitan statistical area. I set up the formula by using spreadsheet software.

To access the efficiency of the LIHTC subsidy housing policy in eliminating spatial match is to measure the people's accessibility to jobs. In Spatial Mismatch Hypothesis, the mismatch is mainly the mismatch of low-income/ entry-level jobs and of workers. The measurement process in this thesis is calculating the Index of Dissimilarity of housing units provided by the LIHTC program and low-income/ entry-level jobs, since most people who live in subsidized housing programs are usually low-income workers. The variables include low-income/ entry-level jobs and housing units. The variable will be changed into low-income jobs and housing units. The measurements range from 0 to 1, where the higher the number, the more separated the two groups are. The formula is listed as follows:

Figure 1: The Index of Dissimilarity

$$\frac{1}{2} \sum_{i=1}^N \left| \frac{b_i}{B} - \frac{w_i}{W} \right|$$

For the Index of Dissimilarity of units by Low Income tax credit program and low-income/ entry-level jobs, where:

b_i = the units by LIHTC program of the i th area, e.g. census tract, in this study i is zip code level area

B = the total the units for the large geographic entity for which the Index of Dissimilarity is being

calculated.

w_i = the low-income/ entry-level jobs of the i th area

W = the total low-income/ entry-level jobs of the large geographic entity for which the Index of Dissimilarity is being calculated.

For the Index of Dissimilarity of residents lives in rental housing and low-income/ entry-level jobs (residents, who lives in rental housing, include rent account for 30% of 30%, 50%, 80% of AMI), where:

b_i = the residents lives in rental housing area of the i th area, e.g. census tract, in this study i is zip code level area

B = the total residents lives in rental housing for the large geographic entity for which the Index of Dissimilarity is being calculated.

w_i = the low-income/ entry-level jobs of the i th area

W = the total low-income/ entry-level jobs of the large geographic entity for which the Index of Dissimilarity is being calculated.

4.2. Study Area

The i areas are 347 zip code areas in the study area. Detailed zip code numbers can be found in the appendix. I chose the New York Metropolitan Area, also known as Metropolitan New York or Greater New York or Tri state Region, as my study area. It is the most populous metropolitan area in the United States and is also one of the most populous in the world. The metropolitan area is defined by the U.S. Office of Management and Budget. There are several definitions for New York Metropolitan area based on commuting pattern, which is the wider region consisting of New York Metropolitan area plus five adjacent metropolitan areas, or a smaller region based on the center of New York and its adjacent zone of influence. I chose the smaller region of New York Metropolitan area as my study area, which makes sense for low income housing assistance programs. The official definition of New York metropolitan statistical area is from the article from Executive Office of the President, Office of Management and Budget in Dec 2006. There are two Major Metropolitan areas for New York:

One is 35620: New York-Northern New Jersey-Long Island, NY-NJ-PA Metropolitan Statistical Area: including New York, NY; Newark, NJ; Edison, NJ; White Plains, NY; Union, NJ; Wayne, NJ.

The other one is 35644: New York-White Plains-Wayne, NY-NJ Metropolitan Division: including Bergen County, NJ; Hudson County, NJ; Passaic County, NJ; Bronx County, NY; Kings County, NY; New York County, NY; Putnam County, NY; Queens County, NY; Richmond County, NY; Rockland County, NY; Westchester County, NY.

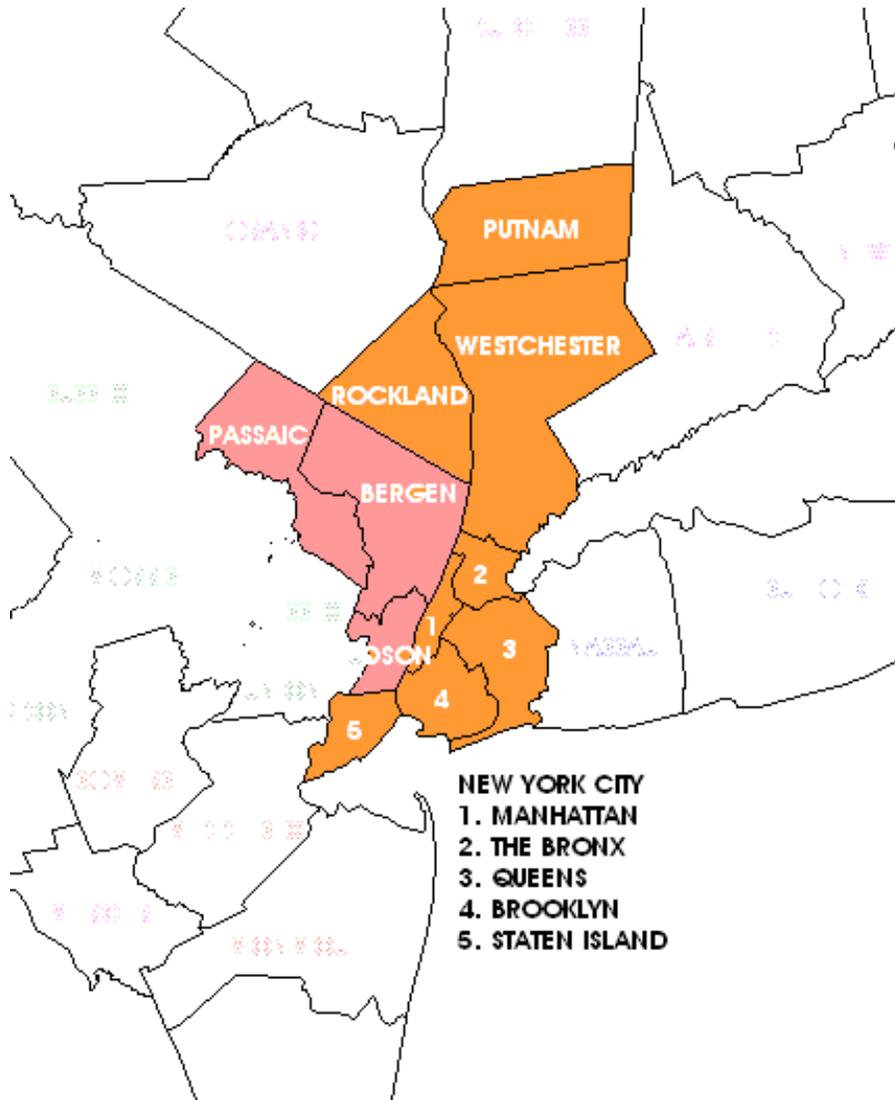
The first one is more focused on New Jersey. So I chose the second one to give a broader view of how the LIHTC works. Another reason for choosing 35644 area is as follows: I can get New Jersey employment data either for 35620 employment data by industry or for the whole state,

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

but not in the form of zip code levels. After I consulted the staff in State of New Jersey Office of Labor Planning and Analysis, I found that they do not have zip code level employment data available, but only data at the municipal level.

So I chose the New York State part of the 35644 New York Metropolitan statistical area as my study area, which includes Bronx County, NY; Kings County, NY; New York County, NY; Putnam County, NY; Queens County, NY; Richmond County, NY; Rockland County, NY; Westchester County, NY, 8 Counties in total. The study area map follows (the orange area is the study area, the pink area is the three New Jersey counties within New York Metropolitan Statistical area):



4.3. Data Collection and Comparison

4.3.1 Employment data:

The zip code level employment data by zip code level in 2000, 2006, and 2008 for all these 8 counties were gathered from New York State Department of Labor Division of Research & Statistics via the help of James Brown, Principal Economist from New York State Department of Labor Division of Research and Statistics, and Elena Volovesky, from the same department. The zip code employment data of three New Jersey counties (Bergen County, Hudson County, Passaic County) are gathered from dataset online from Office of Labor Planning and Analysis State of New Jersey with the help of Mary Jane Carnevale, Cathy Mycoff and Chester Chinsky. Unfortunately, they do not have zip code level data available but only municipal level data. Because the zip code area does not correspond to the municipal area, the difference in units makes index calculation difficult. I tried to match each municipal areas with zip codes as follows: The NY metropolitan area 35644 contains three NJ counties, which are Bergen, Hudson and Passaic. These counties correspondence in zip code is hugely different. For Bergen County, there are 78 zip code areas containing 70 municipal areas. For Hudson County, there are 30 zip code areas containing 12 municipal areas. For Passaic County, there are 48 zip code areas containing 16 municipal areas, but the Municipal boundary is not exactly the same as the zip code boundary, and the New Jersey employment data is only available from 2003 to 2008, or before 1999. Because New Jersey employment data are not available for year 2000, but rental housing data are available for 2000 from census, municipalities are too big to really give a sense of the Mismatch.

I therefore dropped the three New Jersey counties from the New York Metropolitan area. The employment data I got is categorized by industries. There are 17 industries in total in each zip code area, including: agriculture & mining, Utilities, Construction, Manufacturing, Wholesale trade, Retail trade, Transportation & warehousing, Information, finance & insurance, Real estate & Retail & Leasing, Professional Scientific & Tech, Management of companies, Administrative & support, Educational Services, Social Assistance, Art & Entertainment & Recreation, Accommodation & Food service and Other services.

4.3.2 Low-income housing tax credit program data

The LIHTC Program data was gathered from HIHTC database online with the help of Michael Hollar, senior Economist from Policy Development and Research. I downloaded the whole dataset of the all LIHTC projects in U.S. since the program's inception and then selected the zip code areas within the study area. For the LIHTC Program, the most updated date they have available to the public is 2006, so I collected all the programs that were implemented after 1990, given that 30 year rule takes effect after 1990. When the LIHTC program began in 1987, properties receiving tax credits were required to stay eligible for 15 years. However, owners were able to opt out of the program after 15 years if they or the state housing agency were unable to find a buyer who is willing to maintain the affordability restrictions. The 30-year extended use agreement was instituted for properties placed in service in 1990 and later. So the data I collected is from 1990 and after since there is no data available on LIHTC program tenants, so I assume after 1990, the tenants are still in the apartments.

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

There are 3 tax credit agencies in New York state: New York State Division of Housing and Community Renewal; New York State Housing Finance Agency; and City of New York, Dept. of Housing Preservation and Development. Usually the federal government will allocate the credit for affordable housing projects every year. The tax credits are allocated prior to construction or development of the projects. There is typically a 1-3 year period between when the credits are allocated and when the project is placed into service, so in this thesis, the data I selected is from 1990 to 2006, since the most updated data available is stops at 2006. For example, a project that was allocated credits in 2005 might not be ready for occupancy until 2007. So for the year 2006, there are only two projects being allocated credits, but much more being placed into service that year. The web query sorts the projects first by agency, then by year. When the LIHTC program began in 1987, properties receiving tax credits were required to stay eligible for 15 years. This eligibility time period has since been increased to 30 years in 1990. The LIHTC database contains a variable (NONPROG) that indicates whether a project is no longer monitored for compliance due to expired use agreement or some other reason. The 30-year extended use agreement was instituted for properties placed in service in 1990 and later. However, owners are able to opt of the program after 15 years if they or the state housing agency is unable to find a buyer who is willing to maintain the affordability restrictions. There is currently no comprehensive data on tenants living in LIHTC units. So I am using the data after 1990 assuming that people living in LIHTC units are not moving anywhere.

4.3.3 The rental housing data

The rental housing data is acquired from 2000 Decennial Census data portal for Census 2000 data at American Fact Finder website and with the help of Jane, EDS consultant from Columbia University. The most updated data for rental housing is from the year 2000. From the Summary File 3, I customized my table by choosing H62 Gross Rent of Specified renter-occupied housing units instead of choosing H54 Contract Rent of Specified renter-occupied housing units, because the definition of H54 contract rent is the monthly rent agreed to or contracted for, regardless of any furnishings, utilities, fees, meals, or services that may be included. For vacant units, it is the monthly rent asked for the rental unit at the time of enumeration. We need to exclude the vacant units from the total rental housing. So we choose H62 as variable. After selection of geographic type, the last choice is 5-digit zip code areas. The reason for choosing Summary File 3 is that it presents in-depth population and housing data collected on a sample basis. Summary Files 1 and 2 in Census 2000 do not have detailed housing information we need.

This variable has been divided into 24 subcategories, include Total, With cash rent total, With cash rent: less than \$ 100, With cash rent: \$100 to \$149, With cash rent: \$150 to \$199, With cash rent: \$200 to \$249, With cash rent: \$250 to \$299, With cash rent: \$300 to \$349, With cash rent: \$350 to \$399, With cash rent: \$400 to \$449, With cash rent: \$450 to \$499, With cash rent: \$500 to \$549, With cash rent: \$550 to \$599, With cash rent: \$600 to \$649, With cash rent: \$650 to \$699, With cash rent: \$700 to \$749, With cash rent: \$750 to \$799, With cash rent: \$800 to \$849, With cash rent: \$850 to \$899, With cash rent: \$900 to \$949, With cash rent: \$950 to \$999, With cash rent: \$1,000 to \$1,249, With cash rent: \$1,000 to \$1,249, With cash rent: \$1,250 to \$1,499, With cash rent: \$1,500 to \$1,999, With cash rent: \$2,000 or more, no cash rent. I did not count the no-cash rent. Part of the table is as follows:

Table 2: Rental housing data in study area by zip code level

Geography Identifier (part of zip code areas, 347 in total)	Geography	Specified renter-occupied housing units: Total	Specified renter-occupied housing units: With cash rent	Specified renter-occupied housing units: With cash rent; Less than \$100	Specified renter-occupied housing units: With cash rent; \$100 to \$149
10001	10001 5-Digit ZCTA, 100 3-Digit ZCTA	6890	6843	21	132
10002	10002 5-Digit ZCTA, 100 3-Digit ZCTA	27326	27225	294	1144
10003	10003 5-Digit ZCTA, 100 3-Digit ZCTA	21803	21333	83	127
10004	10004 5-Digit ZCTA, 100 3-Digit ZCTA	492	484	0	0
10005	10005 5-Digit ZCTA, 100 3-Digit ZCTA	452	452	0	0
10006	10006 5-Digit ZCTA, 100 3-Digit ZCTA	737	730	5	0

Source: U.S. Census Bureau data SF3

5. Text

5.1 How does LIHTC work

The tax credits are determined by the development costs, and are used by the owner. However, because of Internal Revenue Service regulations and program restrictions, the owners of the property are usually not allowed to use all of the tax credits. Therefore, many LIHTC properties are owned by limited partnership groups, which are put together by syndicators. Under this situation, a lot of companies and private investors who participate within the LIHTC program aim at receiving credits against their federal tax liability in return when investing in housing projects. Tax Credits must be used for new construction, rehabilitation, or acquisition and rehabilitation, and projects must also meet the following requirements:

- At least 20 percent of the units are occupied by households whose income is less than 50

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

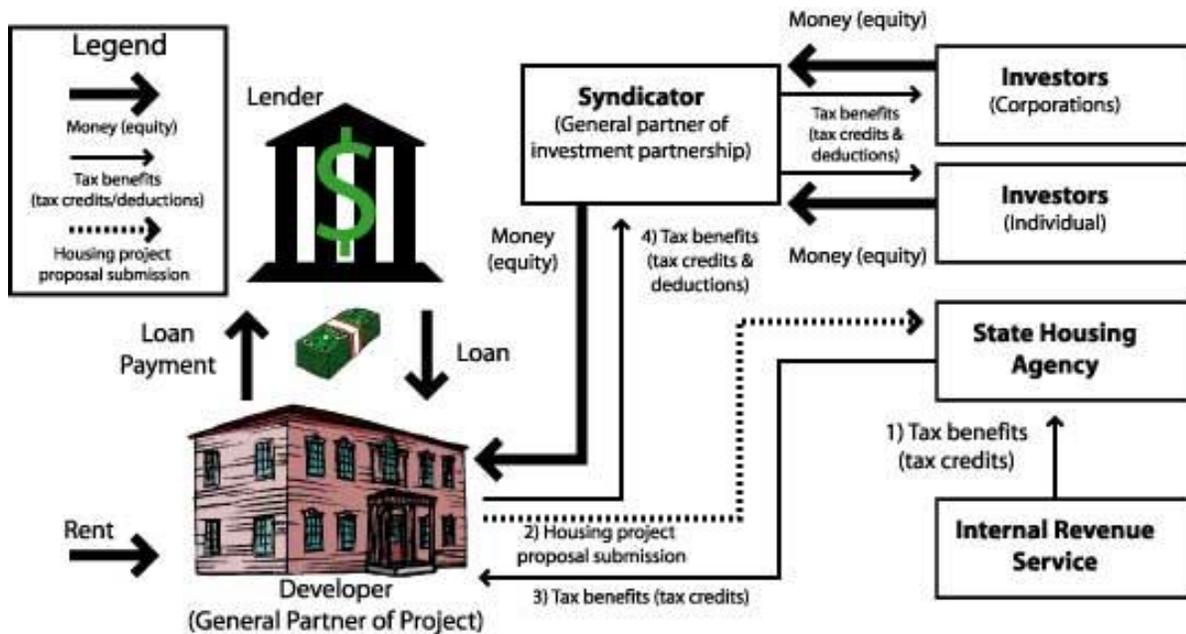
percent of the metropolitan area's median family income, or

- At least 40 percent of the units are occupied by households whose income is less than 60 percent of the metropolitan area's median family income ^{ix}
- When the LIHTC program began in 1987, properties receiving tax credits were required to stay eligible for 15 years. This eligibility time period has been increased to 30 years since 1990. _x

Most states determine the amount of tax credit an individual project receives based on its qualified basis. The qualified basis is determined by following standards. Firstly, the total cost of a project has been calculated. Secondly, the non-depreciable costs need to be deducted from the total project cost to determine the eligible basis, such as land, permanent financing costs, rent reserves and marketing costs, etc. Thirdly, as an option, the project developer may also voluntarily reduce the requested eligible basis in order to gain a competitive advantage. Finally, to determine the qualified basis, the eligible basis is multiplied by the applicable fraction, which is the smaller of the following criteria to arrive at the qualified basis: 1. The percentage of low-income units to total units. Or, 2. The percentage of square footage of the low-income units to the square footage of the total units.

The qualified basis is then multiplied by the federal tax credit rate, published monthly by the Internal Revenue Service, to determine the maximum allowable tax credit allocation. For projects that are new construction or rehabilitation, which are not financed with a federal subsidy, the rate is approximately 9%. For projects involving a federal subsidy (including projects financed more than 50% with tax exempt bonds), the rate is approximately 4%. The 9% and 4% rates are used to determine a project's initial tax credit reservation. A project's final (placed-in-service) tax credit allocation is based on actual project sources and uses of funds, the financing shortfall and the actual applicable federal rate.

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch
 49th ISOCARP Congress 2013



Source: U.S. Department of Housing and Urban Development online

The chart illustrates the process of how the Low-income housing credit system works. The Internal Revenue Service issues the Tax Credits to the state housing agencies. The state housing agencies examine and investigate housing projects' proposal submissions and award the Tax Credits to the developer of the project. In the meantime, the developer could receive money from individual investors or institutional investors or other forms of lenders. In return for additional equity financing, the Tax Credits pass to the syndicator, who gets this equity financing from investors, to whom the syndicator passes the Tax Credits. So the investors get the tax credit advantage of investing in such affordable programs and tax credits can have a much larger impact than tax deductions. For example, Tax credits are subtracted directly from one's tax liability. Credits reduce tax liability dollar-for-dollar, but Tax deductions are subtracted from a taxpayer's total income to compute his or her tax base. Deductions reduce tax liability by the amount of the deduction times the tax rate. For example, for tax credit, a \$1,000 credit in a 15% tax bracket reduces tax liability by \$1,000. But for tax deduction, A \$1,000 deduction in 15% tax bracket reduces taxable income by \$1,000, thereby reducing tax liability by \$150.

5.2 Why testing the spatial mismatch on LIHTC and rental housing is important

LIHTC program is a very effective in housing subsidy used to finance the development of affordable housing and is one of the most important supply side housing assistance programs. According to U.S. Department of Housing and Urban Development staff, there were 4.9 million

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

households living in HUD-subsidized housing in the United States in the year 2000, and the units of LIHTC program have high occupancy, and it is the second biggest supply side housing program among all HUD housing programs. The LIHTC program seems complicated, but many local housing and community development agencies are effectively using its tax credits to increase the supply of affordable housing in their communities.

LIHTC program is definitely a great method for promoting the construction of affordable housing projects, but how the program works in helping those low-income workers is unclear. Although it has high occupancy, we still cannot get a direct sense of how it serves the low-income worker. Whether the LIHTC spatially matches the need of all those low-income workers is the major question we would like to answer through a comparison to the rental-housing match with low-income jobs. We assume that LIHTC program spatially matches low-income jobs better than others since it has the highest occupancy.

To understand how the LIHTC works in eliminating spatial mismatch is important in assessing the supply side housing programs. As I mentioned in Spatial mismatch hypothesis, since the test of the relationship of housing units and low-income jobs has not been done yet, this thesis can be considered as a hope that my observations may lead to other studies.

5.3 Calculation

The calculation of Index of Dissimilarity of rental housing & low income jobs is as follows:

1. Figure out the median income of each county for the NYC metropolitan area in 2000. The data is in Table 3. To figure out the Area Median Income (AMI) in 2000, I got the area median income from HUD of those 8 counties.

Table 3: The area median family income in 2000 in study area

Bronx County	56200
Kings County	56200
New York County	56200
Putnam county	56200
Queens County	56200
Richmond County	56200
Westchester County	83100
Rockland County	82400

Source: U.S. Department of Housing and Urban Development

2. Based on that median income, calculate households with 80% of AMI, 50% of AMI and 30% of

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch
 49th ISOCARP Congress 2013

AMI. Calculate 1/3 household income level to create the following table:

Table 4: Study Area average household income group

County	30% of Area Median Family income	50% of Area Median Family income	80% of Area Median Family income
Bronx County	16860	28100	44960
Kings County	16860	28100	44960
New York County	16860	28100	44960
Putnam county	16860	28100	44960
Queens County	16860	28100	44960
Richmond County	16860	28100	44960
Westchester County	24930	41500	66480
Rockland County	24720	41200	65920

- Figure out the amount of rent a household in each county would pay based on the percentage of AMI (80% of AMI, 50% of AMI, and 30% of AMI).

Table 5: Monthly rent of each income group

County	30% of 30% of AMI	30% of 50% of AMI	30% of 80% of AMI
Bronx County	421 (400)	702 (700)	1124 (1000)
Kings County	421 (400)	702 (700)	1124 (1000)
New York County	421 (400)	702 (700)	1124 (1000)
Putnam county	421 (400)	702 (700)	1124 (1000)
Queens County	421 (400)	702 (700)	1124 (1000)
Richmond County	421 (400)	702 (700)	1124 (1000)
Westchester County	623 (600)	1038 (1000)	1662 (1500)

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch
 49th ISOCARP Congress 2013

Rockland County	618 (600)	1030 (1000)	1648 (1500)
-----------------	-----------	-------------	-------------

- Using the H62 variable in 2000 census zip code level rental housing data, determine how many units are rented for each of these 3 levels, in each zip code in the New York metropolitan area. Since the units are divided by rent range, I selected units according to number in the brackets in table 5.
- Then compile them with low-income jobs by zip code. The selection process for low-income jobs is as follows: total wage divided by total employment, and then calculate the half of the total average wage per person, which is 9952 USD. Those who earn below 9952 in each industry have been selected in each zip code area. Use the values obtained in #4 to calculate the dissimilarity index with the zip code level employment data.

5.4 Result Comparison

When calculating the index for LIHTC recipients and low-income jobs, the process is the same. So the Dissimilarity indexes of LIHTC & Low income job and rental housing & low-income jobs are as follows:

Table 6: Index of Dissimilarity of Housing Assistance programs and Low income jobs

Index of Dissimilarity variables	Index variable: Rental housing that is affordable to those with incomes that are 30% of AMI	Index variable: Rental housing that is affordable to those with incomes that are 50% of AMI	Index variable: Rental Housing that is affordable to those with incomes that are 80% of AMI	Index variable: all LIHTC projects
Index variable: low-income/ entry-level jobs	0.496	0.430	0.405	0.687

Study area: New York Metropolitan area: Bronx county, Kings County, New York County, Putnam County, Queens County, Richmond County, Westchester County, Rockland County

Typically the Index of Dissimilarity is between 0 to 1, with 0 meaning no segregation or spatial disparity, and 1 being complete segregation between the two groups with no spatial intermingling. In this result, we know from the table, that for those people who live in rental housing, 30% of household income is paid for the rental housing, the least segregation occurs between affordable rental housing and low-income jobs. The index is 0.496, which means 49.6% of the households who earn 30% of area median income would have to move in order for the rental housing and low-income job to be spatially integrated. Those who live in rental housing who earn 80% of area median income are segregated from low-income jobs at 0.430,

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

which means 43% of low-income jobs need to be moved into those rental-housing areas to achieve a job housing integration. For households that earn 80% of area median income, 40.5% of the low-income jobs need to be moved into those rental-housing areas to achieve job housing integration. This group of people is segregated the least from jobs. The results of Index of Dissimilarity of the LIHTC program and low income jobs are the highest, with the number 0.687, which means that 68.7% of the LIHTC units would have to move into other areas in order for the LIHTC units and low-income jobs to be spatially integrated.

5.5 Explanation & Recommendation

The LIHTC program as a supply-side method works well to provide affordable housing. But the LIHTC program is not efficient enough in eliminating the spatial mismatch. One of the reasons is developers of LIHTC properties receive an additional 30% in tax credits if the property is located in a Qualified Census Tract (QCT). To be eligible for designation as a QCT, a census tract must have at least 50% of its households earning less than 60% of area median income or a poverty rate of at least 25%. Thus, developers have an incentive to locate in relatively poor areas, where there are presumably fewer jobs. The aim of the program is to increase affordable rental housing. However, unlike public housing, the goal is to have private developers build and manage the properties. Thus, developers receive tax credits in exchange for building low-income units and maintaining rent and income restrictions for at least 15 years. The 30% incentive is for developers to locate the property in areas where, probably, Congress feels affordable housing is under-supplied or needed. So, In this case, the LIHTC program works well in providing affordable housing, but needs to consider the work opportunities for people who live there before issuing the credits to developers. For example, gather information on low-income jobs and roughly calculate how many units might be needed for the area and then make a restriction on how many units should be built to minimize the overbuilt and supply-deficient.

Another reason that the LIHTC program does not efficiently eliminate spatial mismatch is the low-quality jobs are mostly offered by large representative firms, which need to choose the location by themselves. Their location decisions are affected by land rents as the dispersion forces firms to locate in suburbs and firm agglomeration forces them to locate in city center, so usually the dispersion force is stronger than the agglomeration force for the firms which have mostly entry-level jobs. Empirically, the entry-level jobs are mostly manual and service jobs. According to SMH, jobs are decreasing in the central city and there is mainly entry-level job growth rather than more skilled jobs in the suburbs, which cause the problem of spatial mismatch. The LIHTC projects are mostly located in poor neighborhoods, which are in cities. The low-skilled workers mostly are minorities who remained located in the city center where they lived before suburbanization. So to minimize the effect of dispersion force, the local government also needs to give different credits to developers according to the land values and related working opportunities.

Another reason for the inefficiency of LIHTC is rental housing gives tenants much more flexibility to live where they want to live, which gives them mobility in finding a job. The LIHTC program as a supply side housing program does not have the flexibility advantage of finding a job.

But at the end, more studies need to be done in this area. But at least two methods need to be

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

taken into consideration both different tax credits for developer and different tax credits for area. To summarize: 1. The division for different tax credits for developers should be set. For example, in areas that have more low-income jobs, say set a portal of giving 30% additional tax credit for the projects built in the areas which have more low-income jobs or in the areas where 50 % of the household earning is lower than area average median income. 2. The government should allocate tax credits according to land value, which means to match the low-income jobs firms' need. Other methods could be taken into consideration is from the urban planning prespect is some incentive policice could be set as to encourage some enterprise to downtown. At last, I hope my observations could bring more good works in this field.

References

1. Schwartz , Alex F. (2006) Housing Policy in the United States: an introduction. Routledge, Tylor & Francis Froup, LLC
2. Kain, John F.,(May 1968), "Housing Segregation, African American Employment, and Metropolitan Decentralization", in Quarterly Journal of Economics, Vol 82 No 2. Pp. 175-197.
3. Kain, John F. (1992), The Spatial Mismatch Hypothesis: Three Decades Later, Fannie Mae Foundation Housing Policy Debate, Volume 3, Issue 2 pp.371-92
4. Mooney, Joseph D. (May, 1969),Housing Segregation, African American Employment and Metropolitan Decentralization: An Alternative Perspective, The Quarterly Journal of Economics, Vol. 83, No. 2 pp. 299-311
5. Ihlanfeldt, Keith R., & Sjoquist, David L. (1998).The Spatial Mismatch Hypothesis: A Review of Recent Studies and Their Implications for Welfare Reform, qFannie Mae Foundation,Housing Policy Debate • Volume 9, Issue 4
6. Gobillon, Laurent, & Selod , Harris , & Zenou , Yves, (2007). The Mechanisms of Spatial Mismatch, Institut National d'Etudes Démographiques), LEA-WP 0701
7. Stoll, Micheal A, & Holzer, Harry J., & Ihlanfeldt, Keith R. (2000). Within Cities and Suburbs: Racial Residential Concentration and the Spatial Distribution of Employment Opportunities across Sub-Metropolitan Areas. Journal of Policy Analysis and Management, Vol.19, No. 2 pp.207-231.
8. Gao , Shengyi, & Johnston , Robert A., (January, 2005),The Spatial Mismatch Hypothesis: Critique of Research and Proposed Methods, Presentation at the Transportation Research Board's 84th Annual Meeting Washington, D.C.,
9. Executive Office of The President Office of Management and Budget, (2006) Metropolitan Area Definitions, Washington, D.D. 20503, December 18, 2006
10. Leeuw, Frank de & Ekanem, Nkanta F. (Dec., 1971),The Supply of Rental Housing, The American Economic Review, Vol. 61, No. 5 , pp. 806-817
11. Cummings, Jean L. & DiPasquale, Denise (1999),The low-income housing tax credit: an

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

analysis of the first ten years, Fannie Mae Foundation 1999, Housing Policy Debate • Volume 10, Issue 2

12. Hettinger, William S. (2005), Low Income Housing Tax Credit: Strategies for Year 15, Wyndham & Financial Group,
13. McClure, Kirk (2000), The low-income housing tax credit as an aid to housing finance: How well has it worked? Housing Policy Debate, Fannie Mae Foundation 2000 • Volume 11, Issue 1
14. Gilderbloom, John, (1987), Rethinking Rental Housing, Temple University Press, December 30,
15. Freeman, Lance, (2006), Comment on Kirk McClure's "The Low-Income Housing Tax Credit Program Goes Mainstream and Moves to the Suburbs", Fannie Mae Foundation, Housing Policy Debate Volume 17 Issue 3
16. Freeman, Lance & Rohe, William (2000), Subsidized Housing and Neighborhood Racial Transition: An Empirical Investigation, Fannie Mae Foundation, Housing Policy Debate, Volume 11, Issue 1
17. Rohe, William M & Freeman, Lance (Summer 2001), Assisted housing and residential segregation: The role of race and ethnicity in the siting of assisted housing development, American Planning Association. Journal of the American Planning Association; 67, 3; ProQuest Direct Complete pg. 279

Appendix:

Thanks to Professor Lance Freeman's Guidance and those who offered help during my research, without whom I cannot accomplish my research:

Moshe Adler, Professor, Columbia University

Michael Hollar, Senior Economist, Policy Development and Research;

James Brown, Principal Economist, New York State Department of Labor, Division of Research and Statistics

Elena Volovesky, New York State Department of Labor, Division of Research and Statistics

Shital Patel, New York State Department of Labor, Division of Research and Statistics

Jane, EDS Consultant from Electronic Data Service Columbia University

Mary Jane Carnevale, Office of Labor Planning and Analysis, State of New Jersey, 609-292-6861

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch
49th ISOCARP Congress 2013

Cathy Mycoff, Office of Labor Planning and Analysis, State of New Jersey

Chester Chinsky, Office of Planning and analysis, State of New Jersey

Qianqi, Shen, Rutgers University

Figure 1: The Index of Dissimilarity..... 10

Table 1: Overview of Federally subsidized Rental Housing..... 7

Table 2: Rental housing data in study area by zip code level..... 15

Table 3: The area median family income in 2000 in study area 18

Table 4: Study Area median family income by percentage..... 19

Table 5: Study Area median family income by percentage per month 19

Table 6: Index of Dissimilarity of Housing Assistance programs and Low income jobs.. 20

There are 347 zip code areas within the study area.

Bronx Bronx:

10451 10452 10453 10454 10455 10456 10457 10458 10459 10460 10461 10462
10463 10464 10465 10466 10467 10468 10469 10470 10471 10472 10473 10474
10475

Brooklyn Kings

11201 11203 11204 11205 11206 11207 11208 11209 11210 11211 11212 11213
11214 11215 11216 11217 11218 11219 11220 11221 11222 11223 11224 11225
11226 11228 11229 11230 11231 11232 11233 11234 11235 11236 11237 11238
11239 11241 11242 11243 11249 11252 11256

Manhattan New York

10001 10002 10003 10004 10005 10006 10007 10009 10010 10011 10012 10013
10014 10015 10016 10017 10018 10019 10020 10021 10022 10023 10024 10025
10026 10027 10028 10029 10030 10031 10032 10033 10034 10035 10036 10037
10038 10039 10040 10041 10044 10045 10048 10055 10060 10069 10090 10095
10098 10099 10103 10104 10105 10106 10107 10110 10111 10112 10115 10118
10119 10120 10121 10122 10123 10128 10151 10152 10153 10154 10155 10158
10161 10162 10165 10166 10167 10168 10169 10170 10171 10172 10173 10174
10175 10176 10177 10178 10199 10270 10271 10278 10279 10280 10281 10282

Whether Supply Side Housing Assistance Program is Efficient in Helping Overcome Spatial Mismatch

49th ISOCARP Congress 2013

Queens

11101 11102 11103 11004 11104 11105 11106 11109 11351 11354 11355 11356
11357 11358 11359 11360 11361 11362 11363 11364 11365 11366 11367 11368
11369 11370 11371 11372 11373 11374 11375 11377 11378 11379 11385 11411
11412 11413 11414 11415 11416 11417 11418 11419 11420 11421 11422 11423
11426 11427 11428 11429 11430 11432 11433 11434 11435 11436 11691 11692
11693 11694 11697

Staten Island Richmond

10301 10302 10303 10304 10305 10306 10307 10308 10309 10310 10311 10312
10314

Westchester County

10501 Amawalk 10502 Ardsley 10504 Armonk 10505 Baldwin Place 10506
Bedford 10507 Bedford Hills 10510 Briarcliff Manor 10511 Buchanan 10514
Chappaqua 10518 Cross River 10520 Croton on Hudson 10522 Dobbs Ferry 10523
Elmsford 10526 Goldens Bridge 10527 Granite Springs 10528 Harrison 1053
Hartsdale 10532 Hawthorne 10533 Irvington 10535 Jefferson Valley 10536 Katonah
10538 Larchmont 10543 Mamaroneck 10546 Millwood 10547 Mohegan Lake 10548
Montrose 10549 Mount Kisco 10550 Mount Vernon 10552 Mount Vernon 10553 Mount
Vernon 10560 North Salem 10562 Ossining 10566 Peekskill 10567 Cortlandt Manor
10570 Pleasantville 10573 Port Chester 10576 Pound Ridge 10577 Purchase 10578
Purdys 10580 Rye 10583 Scarsdale 10588 Shrub Oak 10589 Somers 10590 South
Salem 10591 Tarrytown 10594 Thornwood 10595 Valhalla 10597 Waccabuc 10598
Yorktown Heights 10601 White Plains 10603 White Plains 10604 West Harrison 10605
White Plains 10606 White Plains 10607 White Plains 10701 Yonkers 10703 Yonkers
10704 Yonkers 10705 Yonkers 10706 Hastings on Hudson 10707 Tuckahoe 10708
Bronxville 10709 Eastchester 10710 Yonkers 10801 New Rochelle 10803 Pelham 10804
New Rochelle 10805 New Rochelle

Rockland County zip codes

Suffern 10901 Bear Mountain 10911 Blauvelt 10913 Congers 10920 Garnerville 10923
Haverstraw 10927 Hillburn 10931 Rockland M P C 10951 Monsey 10952 Nanuet
10954 New City 10956 Nyack 10960 Orangeburg 10962 Palisades 10964 Pearl River
10965 Piermont 10968 Pomona 10970 Sloatsburg 10974 Sparkill 10976 Spring
Valley 10977 Stony Point 10980 Tallman 10982 Tappan 10983 Thiells 10984
Tomkins Cove 10986 Valley Cottage 10989 West Haverstraw 10993 West Nyack
10994 West Nyack 10995

ZIP Code(s) in Putnam county, NY

10509 10512 10516 10524 10537 10541 10579 12563

Endnotes

ⁱ John F. Kain, "Housing Segregation, African American Employment, and Metropolitan Decentralization", in *Quarterly Journal of Economics*, May 1968. Vol 82 No 2. P. 177

ⁱⁱ John F. Kain, "Housing Segregation, African American Employment, and Metropolitan Decentralization", in *Quarterly Journal of Economics*, May 1968. Vol 82 No 2. P. 183

ⁱⁱⁱ John F. Kain, "Housing Segregation, African American Employment, and Metropolitan Decentralization", in *Quarterly Journal of Economics*, May 1968. Vol 82 No 2. P. 192

^{iv} John F. Kain, "Housing Segregation, African American Employment, and Metropolitan Decentralization", in *Quarterly Journal of Economics*, May 1968. Vol 82 No 2. P. 196

^v Joseph D. Mooney, Housing Segregation, African American Employment and Metropolitan Decentralization: An Alternative Perspective, *The Quarterly Journal of Economics*, Vol. 83, No. 2 (May, 1969), P. 310

^{vi} John F. Kain, *The Spatial Mismatch Hypothesis: Three Decades Later*, Fannie Mae Foundation (1992), *Housing Policy Debate*, Volume 3, Issue 2 P.374

^{vii} Alex F. Schwartz (2006) *Housing Policy in the United States: an introduction*. Routledge, Taylor & Francis Group, LLC P. 5

^{viii} William M Rohe; Lance Freeman, Assisted housing and residential segregation: The role of race and ethnicity in the siting of assisted housing development, *American Planning Association. Journal of the American Planning Association*; Summer 2001; 67, 3; ProQuest Direct Complete pg. 279

^{ix} Kirk McClure, The low-income housing tax credit as an aid to housing finance: How well has it worked? *Housing Policy Debate*, Fannie Mae Foundation 2000 • Volume 11, Issue 1, P3

^x U.S. Department of Housing and Urban Development: *Homes & Communities online*

The peer reviewers no 39 and no 40 sent us the following:

Planning for lively spaces: Adding value to old spaces

Elizelle Juaneé CILLIERS & Nicolene DE JONG

North West University, Unit for Environmental Sciences and Management, Urban and Regional Planning, Potchestroom, 2531, South Africa.

Peer review: 91

Abstract

The complexity of the spatial planning process has increased because the modern, highly-developed society is becoming increasingly dynamic with regard to social, sustainability and economic issues. The society wants its urban environment to be a reflection of its needs, demands and preferences. Planning for space implies planning for people, whose needs are constantly changing. Places are frequently valued for several intertwined reasons that can coexist and complement each other, but also compete and cause conflict. Identifying the reasons why the place is valued is essential in planning for the space.

Planners need to turn the conventional way of planning up-side down and introduce a more controversial planning process, focussing on the people and the life of the cities and public spaces, in order to enhance the value of spaces which already exists, and adhere to the needs of modern societies. Lively planning is introduced in this paper as the controversial planning process. Lively planning focuses on the inclusive public realm, creating versatile public spaces to celebrate the uniqueness of a place, encouraging alternative uses of the space and improve possibilities within the space. Lively planning transforms locations that people inhabit, into the places they live in. This paper will evaluate case studies where lively planning was introduced to transform the area and enhance the value of the space. Two specific case studies, namely Louvain-La-Neuve (Belgium) and Doornakkers (The Netherlands) will be discussed and evaluated to determine the added value brought along by the lively planning processes. The paper will conclude with initiatives to transform the current planning approaches in an attempt to add value to spaces that already exists.

Acknowledgements

This research (or parts thereof) was made possible by the financial contribution of the NRF (National Research Foundation) South Africa. Any opinion, findings and conclusions or recommendations expressed in this material are those of the author(s) and therefore the NRF does not accept any liability in regard thereto.

1. Introduction to lively planning

Lively planning aims at creating lively spaces and public places for all citizens. Lively planning thus focuses on the social dimension of planning and the people that will inhabit the spaces. Soholt (2004:8) states that “Planners and architects ought to turn the conventional way of planning up-side down and introduce a more controversial planning process with the people and the life of the cities and public spaces in focus. Instead of starting with the buildings, we need to envision the future life of an area first. This way we can form nice spaces that are inviting for people and take in consideration people’s needs and behavioural patterns, and when the spaces are formed we can develop guidelines for planning of buildings.” This is the aim of the lively planning approach, substantiated by Hobart City Council (2011:1) whom regards a place as ‘lively’ when the focus is on the public grounds; being inclusive for all and open for a wide range of user groups.

Lively planning focuses on the inclusive public realm, creating versatile public spaces to celebrate the uniqueness of a place, encouraging alternative uses of the space and improve possibilities within the space. Lively planning transforms locations that people inhabit, into the places they live in. The challenge of the lively planning approach is to create spaces for people whose needs are constantly changing (Cilliers *et al.* (2012:13) and for society who is becoming more dynamic. The urban environment and public spaces should thus continuously address the needs of the community. This poses a further challenge as the changes in the urban environment are much slower as opposed to people’s needs (Barendse *et al.*, 2007:3), as illustrated in the following figure.

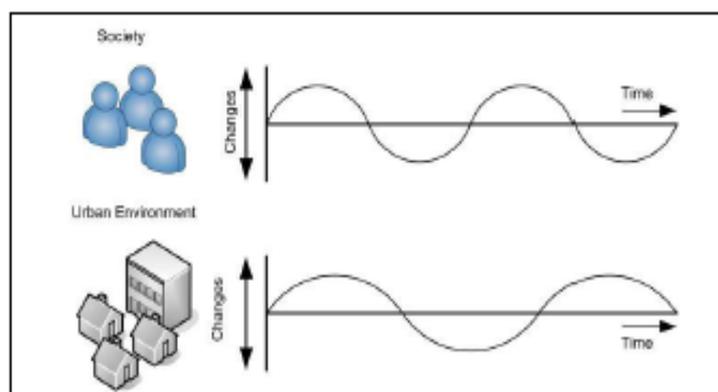


Figure 1: The change of society versus the urban environment

Source: Barendse *et al.* (2007:3)

The tension between the slow changing environment and the dynamic society can be minimized through comprehensive public participation processes (Soholt, 2004:8), where people’s needs and behavioral patterns are prioritized in order to plan for and create lively places, not only for present use, but future usage as well and thus adhere to sustainable planning initiatives. Another attempt to bridge the gap between the fast changing social needs and slow changing environment is by means of green-planning initiatives, using the natural environment to create places for social interaction and function.

When bringing lively-planning approaches and green-planning initiatives together, versatile public spaces can be created that celebrate the uniqueness of a place, while encouraging alternative uses of the space and improving possibilities for staying in the space (Hobart City Council, 2011:2). This integrated approach seeks to turn the conventional way of planning up-side down and introduce a more controversial planning process, focusing on the people-scale and actual users of the space.

Gehl (2004:31) supports the shift to site- and people-scale planning where the flow of natural life and movement trends are interpreted in order to create spaces that enhance these movements and functions and to, subsequently, create buildings and environments that will support these spaces. The execution of a lively planning approach is therefore made up of high density, integration, diversity, good public spaces and active ground floor facades (Gehl, 2004:37).

2. From spaces to places

Lively planning is based on the concept of place-making, aiming to transform spaces into places characterized by functions of activity and use. According to Harrison and Dourish (1996:67) space refers to the structural and geometrical qualities found in any physical environment whereas a place is a concept that also includes the dimensions of lived experience, interaction and the use of a space by its inhabitants. A place can be regarded as a space with function and meaning.

In this sense, a successful public space is a lively place that is secure and distinctive and contributes to the needs of the people who use it (Harrison and Dourish, 1996:67). Cowan *et al.* (2006:23) agrees that the process of successfully transforming a space to a place is based on the inputs of the people inhabiting the space, again stressing the importance of participatory planning processes as part of the place-making and lively planning approaches.

Cilliers *et al.* (2012:11) refers to successful places as a space enriched with the presence of numerous functions and activities regarding community life, where people inhabiting this place possesses a feeling of ownership and connectedness. The creation of place is therefore rooted in the process of integrating and delivering a variety of functions and activities within a mere space. The following figure illustrates certain measurements, intangibles and key attributes that should form part of the place-making process.



Figure 1: Place-making elements

Source: Adopted from Baltimore City Department of Planning (2010:90)

There are furthermore various factors that determine the success of a lively public space, captured in Table 1. These are broad principles that places should be measured against in order to determine their success in terms of the public sphere. These factors determine successful places that share a host of factors extending beyond mere physical dimensions, but incorporate the necessity of lived experience (Harrison & Dourish, 1996:67) and human connectedness (Cilliers *et al.*, 2012:9; Cowan *et al.*, 2006:24). The presence of these factors therefore ensures liveliness within a space, and the transformation of old spaces into lively places.

Factor	Description of successful public space
Identity	Historically, public spaces were the centre of communities; traditionally it helped shape the identity of entire cities by their image.
Attractions	Great public spaces have a variety of smaller “places” within it that appeal to various people. Functions create attractions.
Amenities	A public space should feature amenities that make it comfortable for people to use. A good amenity will help establish social interaction.
Flexibility	The use of a public space naturally changes during the day, week, and year and to respond to natural fluctuations. Flexibility needs to be built in at the outset.
Seasonal	Successful public spaces need more than one design, which can change with the seasons. Adaptive usage.
Access	A civic destination needs to be easy accessible, including crosswalks, lights timed for pedestrians, slow moving traffic and proper signage.
Visibility	The elements within space should be visible from a distance, and ground floor activity of buildings surrounding it should entice pedestrians to move.

Table 1: Factors of successful public places

Source: Adopted from Baltimore City Department of Planning (2010:170)

These aspects were all carefully studied and included in the conducting of the Baltimore Downtown Strategic Plan in which one of the goals was to improve existing public spaces and creating new open spaces to attract and retain businesses and residents in Downtown (Baltimore City Department of Planning, 2010:3) based on these abovementioned factors of successful public places (Table 1) and place-making elements (Figure 1).

The open space planning process included an assessment of open spaces within the study area and included stakeholder input in identifying five focus areas to study in more detail with a series of place-making workshops to evaluate and discuss potential physical improvements to each of these five areas. Within these processes and evaluations aspects like networks, sustainability, transportation and place-making was grounded as “guiding concepts” around which specific recommendations are based (Baltimore City Department of Planning, 2010:4).

Based on the simultaneous recognition and implementation of these guiding concepts and the abovementioned factors and elements, general recommendations were provided aimed at including these factors and elements in the current “deficient” open spaces in the West Side (Baltimore City Department of Planning, 2010:4).

The following table summarizes the approaches used to redevelop these open spaces along with the specific factors and/or elements that were included.

Recommendations	Description	Elements or factors included
Sustainable practices	Street tree plantings; utilizing signage and display panel; using of solar structures for water features and lighting.	<u>Flexibility; Seasonal planning; visibility.</u> Image – clean, “green”, attractive. Uses – indigenous, sustainable.
Transportation and Mode-Sharing	Accommodating bicyclists and considering short and long-term bike parking; converting non-arterial streets to two-way traffic flow to improve pedestrian environment and motor circulation.	<u>Access; Visibility.</u> Access and Linkages – connected, walkable; convenient, accessible.
Red Line and Metro Station Areas	Give function and presence to stations; capturing their unique identity; equal design consideration for pedestrians and accommodating pedestrian access by maintaining direct sight lines to stations.	<u>Access; Visibility; Identity.</u> Image – safe, clean, attractive, historic. Access and Linkages – connected; convenient.
Streetscape Enhancements	Utilize “shared space” to maintain vehicular traffic but emphasize pedestrian environment; creative ways to introduce shade, scale and color where street trees are not possible.	<u>Visibility; Attractions; Amenities; Identity.</u> Access and Linkages – pedestrian activity. Image – walkable, attractive.
Temporary Enhancements	Utilize pavement striping before investing in permanent solutions; utilize pots and planters able to be moved to different locations and “pop-up-cafes” where sidewalks are too narrow for outdoor dining.	<u>Amenities; Attractions; Flexibility; Visibility; Identity.</u> Sociability – diverse, street life, welcoming. Image – “green”, attractive.
Public Art	Develop solutions for blank walls (local artists); rotate art to keep space fresh and give people additional reasons to return.	<u>Seasonal planning; Identity; Attractions.</u> Image –attractive, charming; Uses – indigenous, real, special.
Availability of Refreshments	Consolidated and managed vending operations; recruit and locate restaurant uses to activate spaces.	<u>Amenities; Identity; Attractions.</u> Sociability – neighborly, diverse; Uses – local business ownership; property values. Image – Suitable, attractive.
Partnerships	Property owners, Downtown institutions, foundations and a residential base for stakeholders.	<u>Identity</u> Uses – property values, local business ownerships, rent levels; Sociability – neighborly, pride, friendly, stewardship.

Table 2: Baltimore open space plan – summary of recommendations

Source: Own creation based on Baltimore City Department of Planning (2010)

The following images provide visual representations of potential open space development based on the abovementioned recommendations:



Figure 2: Visual representations of Baltimore open space recommendations

Source: Adopted from Baltimore City Department of Planning (2010:12)

2.2 Creating a lively public place

As described previously, it is evident that lively places and public places are similar concepts, as both focus on the public realm and social functions. Both concepts need a people-focused approach (Cilliers *et al.*, 2012:16) and dimensions of lived experience, interaction and use by inhabitants (inhabitants in this context defined as 'public'). Both focus on public grounds, being inclusive for all people and open for a wide range of user groups.

Loudier and Dubois (2001:1) define a lively public place as a meeting place, a place for debate, controversy, discussion; a place that is accessible to all and that everyone is able to use. Lively planning seeks to plan for people, their needs and their constantly changing and evolving desires (Cilliers *et al.*, 2012:13).

Public places therefore need to constantly be regenerated (Loudier & Dubois, 2001:17), well and transparently managed (Philips, 2010:14) and well maintained (Baycan-Levent, 2007:11) in order to constantly adopt and comply with present human needs. Spaces should be versatile in order to ensure possibilities of change.

The following pilot studies illustrate the linkages between place-making approaches and green-planning approaches, where green-planning initiatives were used to transform a public space into a meaningful public place. The lively planning approach in creating public places in each of the case studies was discussed along with the lively attributes and public place-making factors. It seeks to identify initiatives used to transform the old spaces into vibrant, lively public places, by adding value to spaces which already exists.

3. Lively planning case studies

3.1 *Louvain-La-Neuve (Belgium)*

Place des Wallons in Louvain-la-Neuve, Wallonia, Belgium, is an urban space that has been built 40 years ago as a university city. Figure 3 illustrates the current open space, characterized as a neglected space with no function. As part of the LICl lively cities Interreg EU project, this public space in Louvain-La-Neuve in Belgium (Figure 1) was redeveloped to address this problem and add value to the space and enhance user function by introducing lively-planning approaches supported by green-planning initiatives, and transform the space into a destination where the public would choose to spend their time (illustrated by Figure 3).

An analysis was conducted within the space, comprising of movement within the space, actor-analysis, natural environment-analysis, as well as day-night functions. The analysis identified scattered routing within the area as the core issue to address in order to transform the old space into a lively public place. The lively-planning approach introduced recognizable entrances, guided walking routes, and more places to sit and socialize, as part of the transformation. These initiatives contributed to the sense-of-place of the area, the movement patterns and overall functional use and sustainability. Further green-planning initiatives were introduced to support the lively-planning concept, including city-trees, green roofs, green graffiti and public furniture (refer to Figure 3).

The city-tree initiative was based on the fact that trees are not fond of cities, but people love trees in the city as trees create a sense of place. In order for a tree to grow and be healthy it needs the same circumstances as it would have in its natural habitat. The city-tree initiative was introduced to help sustain the tree life within the case study area, based on implementing artificial habitats for city trees (such as tree boxes, permavoid boxes and tree sand (refer to Cilliers 2012 for details)).

The green-roof initiative included plants in the form of grasses, shrubs and even trees which was literally lifted up to the next level (Jansen and Ruifrok, 2012a: 17).

The green-graffiti initiative introduced moss graffiti (also called eco-graffiti or green graffiti) intended to replace spray paint, paint-markers or other such toxic chemicals and paints with a “moss-paint” that can grow on its own. The idea of making living, breathing graffiti has become a green-initiative and creative outlet for graffiti artists, especially since people became more eco-friendly and environmentally aware. It can also be considered another form of guerrilla gardening (Jansen and Ruifrok, 2012a: 18).



Figure 3: Re-development plan for Louvain-La-Neuve

Source: Adopted from Jansen and Ruifrok (2012b: 1).

The most contributory aspects included in this case study with regards to lively public place planning was the shaping of movement patterns within the space and introduction of green-initiatives which contributed to the creation of a sense of place within this area. These initiatives enhances place-making within a public space (i.e. transforming a 'space' into a 'place'), as it creates a quality environment in which social and environmental needs are simultaneously addressed (i.e. the focus on people-scale of planning in order to create PUBLIC lively places).

3.2 Doornakkers (The Netherlands)

Another redevelop project was located in Doornakkers, a residential neighbourhood in Eindhoven (The Netherlands), characterized by the "normal" problems and urban complexities of degeneration and neglectance of older urban areas, and shortage of qualitative social and public space. The other problem of this area was in terms of the lack of green spaces. The aim of the redevelopment project was to re-plan this area by means of lively-planning approaches supported by green-planning initiatives, to develop a qualitative green environment a network of green spaces, whilst providing adequate qualitative social public spaces and redeveloping the urban space of Doornakkers.

In an attempt to enhance the lively-planning approach and create lively public places within this area, green-planning initiatives were introduced. The aim was to create a "green-heart" within the area, combining social and environmental functions.

Various analyses was conducted, including professional analyses to determine environmental constrains and possibilities, stakeholder analyses to identify actual stakeholders and users of the area, risk analyses and SWOT-analyses to evaluate the places and their possibilities, strengths, weaknesses and threats, green analyses to quantify green values and identify gaps, and site analyses to determine micro and macro impacts. Two core green-initiatives were introduced to support the lively-planning approach, namely green walking routes, and green impulses.

The green walking routes initiative focussed on landmarks within the broader residential area, with the objective to design a space that will ensure residents to interact more with their direct environment. The social interaction and cultural significance where the main driving forces considered in the planning of the green walking routes, along with spin-offs such as recreation possibilities and a qualitative, usable environment. In terms of environmental quality, the expansion of current tree structures in the area where enhanced, along core corridors of movement (Boogaards, 2012:71). The current green networks (Figure 4a) was thus re-planned to be more integrative, connected by means of the green walking routes (Figure 4b).

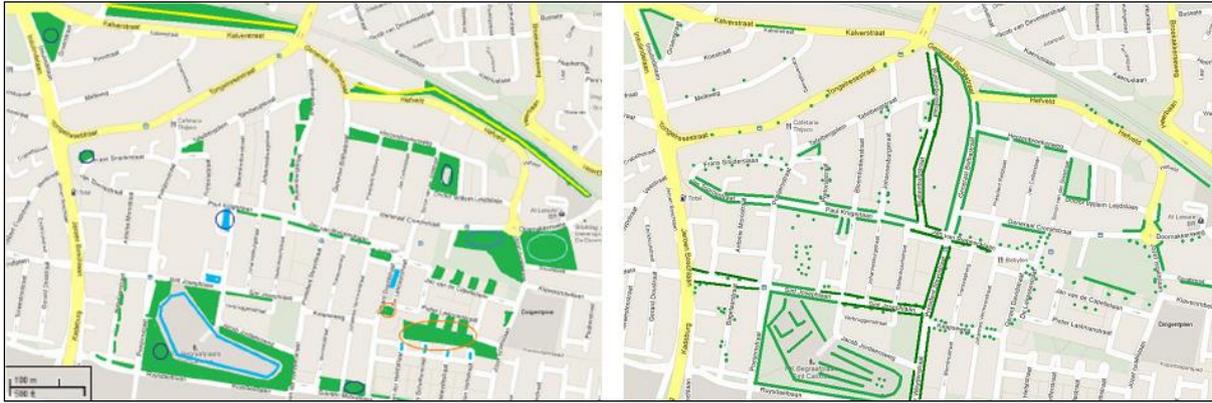


Figure 4: Current green network versus expansion of green structure along core corridors
Source: Boogaards (2012:70-71)

The green-impulse initiative was a creative approach to the planning of lively public green spaces, focussing on children-friendly spaces and the development thereof by means of a design-competition among residents. The green-impulse pilot raised awareness amongst residents (stated as a green heart beat), where social capital and public interest were enhanced as a result of an integrated green-planning initiative and holistic place-making approach. Concept designs were implemented in practice, transforming old spaces to lively public places.

The introduction of the green-planning initiatives as part of the place-making process in the public spaces in Doornakkers in the Netherlands, created a strong “green-identity”, while enhancing social functions in the area. The initiatives enhanced social awareness and green-planning among users of the space and community members, having a multi-dimensional impact.

4. Conclusion

Planning is a continuous process of anticipating and preparing for foreseeable future changes (Cilliers et al, 2011). Lively planning is a bottom-up planning approach, focused on the people-scale and aiming to transform old spaces into vibrant, lively places, constantly trying to address the social changes and needs. Green-planning initiatives assist the lively-planning approach by transforming old spaces by means of green networks that enhance the social and environmental function within an area.

The green-planning approaches described in this paper (such as city-trees, green roofs, green graffiti, green walking routes and green impulses) were specifically focused on the social and environmental benefits of a space. The case studies captured initiatives to transform the current planning approaches in an attempt to add value to spaces which already exists and address the gap between environmental planning and planning for the people (i.e. the changing society).

Lively planning approaches as captured in the case studies enhanced the identity of the place, focussed on the social dimension and social functions within the space and the natural environment (green-initiatives) that support the lively-planning approaches. These green-planning initiatives were found to enhance the value of the current spaces, acknowledging the dynamic and constantly changing social needs.

It was concluded that green-planning initiatives does not only enhance lively-planning approaches, but gives a space function. It creates a quality environment, addressing social and environmental needs simultaneously. There are various spin-offs for introducing green-spaces in our cities. Urban Planners, authorities and decision-makers should be the drivers of change in our cities, creating a sustainable, green environment for all residents. "To change life, we must first change space" (Lefebvre, 1991: 190).

References:

Baltimore City Department of Planning. (2010). *Downtown Open Space Plan*, Baltimore, Maryland. Project for Public Spaces, Flannigan Consulting, Sabra Wang Associates, 202 pp.

Barendse P, Duerink S, Govaart Y. (2007). "A Multi Stakeholder Collaborative Urban Planning Model". *ENHR 2007 International Conference 'Sustainable Urban Areas'*, Workshop 21: Tools to facilitate housing and urban processes. Rotterdam.

Baycan-Levent, T. (2007). Critical success factors in planning and management of urban green spaces in Europe. Istanbul, Turkey: Istanbul Technical University.

Boogaard, M. (2012). Een nieuw hart voor Doornakkers: Revitalisering van een wederopbouwwijk met behulp van Placemaking. Finale thesis Management Buitenruimte, University of Applied Science, Van Hall Larenstein, Wageningen.

Cilliers EJ, Diemont E, Stobbelaar DJ, Timmermans W, 2011, "Enhancing sustainable development by means of the Workbench Method". *Environment and Planning B: Planning and Design*, 38(4) 579 – 584.

Cilliers, E.J., Timmermans, W., van den Goorbergh, F. & Slijkhuis, J.S.A. (2012). The Lively Cities (LICI) background document: LICI theory and planning approaches. Part of the LICI project (Lively Cities, made possible by INTERREG IVB North West Europe, European Regional Development Fund, European Territorial Cooperation, 2007-2013. Wageningen University of Applied Sciences, Van Hall Larenstein).

Cowan, S., Lakeman, M., Leis, J., Lerch, D. & Semenza, J.C. (2006). The City Repair Project. www.inthefield.info/city_repair.pdf Date of access: 8 May 2013.

Gehl, J. (2004). "Lively, attractive and save cities, but how?" *Cities for people as design challenge*. Centre for Public Space Research, School of Architecture, Royal Danish Academy of Fine Arts. Paper presented at the Stockholm Conference "New Urbanism and Beyond", 4-8 October 2004. 42 pp.

Harrison, S. & Dourish, P. (1996). Re-place-ing space: the roles of place and space in collaborative systems. Proc. Of CSCW'96. ACM 1996: 67-76.

Hobart City Council. (2011). *Public Spaces and Public Life, a city with people in mind: Plans for a Lively Inner City*. 2p.

Jansen, R. & Ruifrok, R.J. (2012(a)). *Green solutions for public spaces: For City managers and Place-makers*. Thesis Management Exterior, University of Applied Sciences, Van Hall Larenstein. ABT-Repro, Arnhem. 80 pp.

Jansen, R. & Ruifrok, R.J. (2012(b)). Presentation on principle design process for Place Des Wallons, Louvain-la-Neuve, Belgique. 24 pp. University of Applied Science, Van Hall Larenstein.

Lefebvre, H. (1991). *The Production of Space*, Blackwell, Oxford.

Loudier, C. & Dubois, J.L. (2001). Public spaces: Between insecurity and hospitality. http://www.ocs.polito.it/biblioteca/verde/uk_PARTIE201_C133.134.pdf Date of access: 12 Aug. 2012.

Philips. (2010). *Liveable Cities: Challenges and opportunities for policymakers*, A report from the Economist Intelligence Unit. London: The Economist Intelligence Unit.

Soholt, H. (2004). "Life, spaces and buildings – turning the traditional planning process upside down". *Walk21-V Cities for People*, 5th International Conference on Walking in the 21st Century, June 9-11 2004, Copenhagen, Denmark.

From Garden City to City in a Garden (Case Study: Shiraz City as a "Permaculture" Model in Iran)

Sara FATTABI, Apadana Institute of Art and Architecture, Iran
Mojtaba BAZRKAR, MAF Hypermarkets, Iran

1. City Developing or Garden creating?

Human face many challenges related to the health and well being. Many of these challenges arise as the direct consequence of dense urban environments. Industry, automobiles, and impermeable concrete and asphalt surfaces combine to negatively impact upon the air and water quality, while climate change serves to exacerbate the urban heat island effect through global warming.

To help alleviate the environmental problems encountered with dense urban habitation and to encourage sustainable development, governments and non-profit agencies worldwide are working toward creating laws, establishing standards, and funding incentives to promote best practices in development. Rooftop gardens are an excellent example of incorporating passive, eco-friendly technology into new or existing development. Rooftop gardens help mitigate the negative impacts of cities on the environment by: conserving energy and water, improving air and water quality, assisting in storm water management, absorbing solar radiation, becoming a source of local food production, providing habitat restoration, and creating natural retreats.

Many cities have a lot of 'lost', green space that can help them to communicate with nature. Good weather that can help them breeze better. At least, better life through developing the city. As our population grows, we will have to make a greater effort to ensure that we continue to make space for greenery and our natural heritage. "...[W]hen basic necessities are no longer produced locally, people lose an important base for understanding how their everyday lives are connected with the environment and lose respect for the systems that sustain them" (Perkins, 1996,70).

2. Roof Gardening as one solution to Green

The Green Movement in the 60's has rejuvenated much interest in the promotion of roof greening as the answer to the host of problems related to rapid urbanization (Michael Wong), Rooftop gardening is only one example of urban agriculture, but has an important place within a comprehensive urban agriculture strategy, as it takes advantage of underutilized urban spaces. Nowadays the creation of green roofs and rooftop gardens are becoming increasingly popular in so many cities. These practices reduce the city's environmental footprint, increase sustainability of urban areas and improve quality of life. At the same time, the many benefits of local food production, particularly increased food security, are becoming more apparent.

The benefits of greening roofs are many. Green roofs use sustainable technologies and create jobs to produce roofing membranes, light weight growing mediums and filters (Kuhn, 1996). In addition, jobs are created in research, design, construction, landscaping, urban farming and consulting (RGRG, 2002).

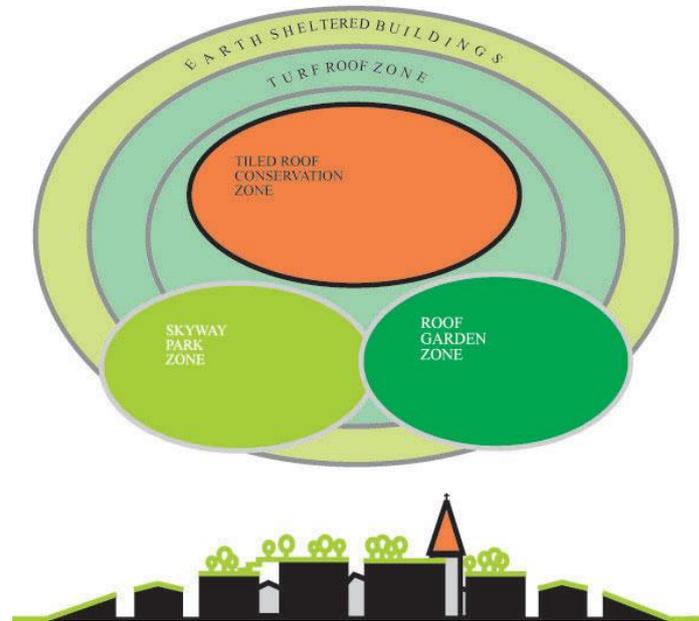


Figure 1: The diagram from a 1996 City as landscape essay on Eco-cities, suggests a citywide approach to the landscape treatment of roofs capes – and has a slight visual kinship with Michael Van Valkenburgh Associate’s design for the ASLA green roof.

2.1 Environmental Benefits of Roof Gardens

Exposure to green space reduces stress and increases a sense of wellness and belonging (Bremer et al, 2003, p. 55). “A ten percent increase in nearby green space was found to decrease a person’s health complaints in an amount equivalent to a five year reduction in that person’s age” (Sherer, 2006, p. 16). Food Production Reaches New Heights An important opportunity from greening rooftops is the potential for local food production. Rooftops provide accessible land tenure for urban farmers since the majority of other activities within the city do not compete for roof space (Meletist and Webster, 1999). By growing food on rooftops, citizens have an opportunity to contribute to the local economy, increase their own food security, grow fresh organic produce and decrease the time and transportation costs between themselves and their food (GRHC, 2002).

Conclusions Rooftops provide an alternative venue for producing food locally; reclamation of food citizenship. Corporate control, limited information to consumers, manipulation of consumers through supermarket hype and an emphasis on processed and convenience foods are all threats to food security. (Welsh and MacRae, 1998) Urban agriculture addresses economic, poverty, health and environmental issues and is a social movement that allows for people to make important choices about the food they eat (Guberman, 1998). Gardening is a favored pastime for many residents of Shiraz as a vehicle for relaxation, creative expression and beautification.

3. Roof gardening through “Permaculture”

Permaculture was developed in the early 1970's by Australian ecologists Bill Mollison and David Holmgren as a positive response to the energy crisis of the time and to ensuing environmental degradation and resource depletion. Permaculture was founded on the following assumptions: (Holmgren, 2002).

- 1) The environmental crisis is real and of a magnitude that will transform industrial society and threaten its existence,
- 2) Humans are subject to the same natural laws that govern the rest of the universe,



Figure 2: The diagram from a 1996 City as landscape essay on Eco-cities, suggests

Analysis of the roof top as an area for the development of permaculture design was chosen particularly as an investigation of how roof tops effectively become a building's fifth elevation. Roof tops often viewed from above in a city, with multilevel buildings, but rarely given the same amount of consideration as the other four conventional elevations. Roof tops in some cases are out of mind but not out of sight, becoming an unsightly and unlovely yet very dominant part of the city experience. The notion explored here is that these areas could become a very positive asset to a city if they were covered in vegetation. Perhaps there are more rooftop gardens in the 'Garden City' than most people know of, but even if they are out there, not enough is known by the general public about the possibilities above their heads.

“Permaculture” is derived from the words permanent, agriculture and culture. It comes from the principle that a stable, sustainable culture cannot exist without an integrated relationship with a system of sustainable agriculture (Holmgren, 2002, Whitefield 2004). From its conception, permaculture has had a strong emphasis on developing relationships between communities and agriculture for the purpose of creating a stable, secure, localized food system. Permaculture systems seek to amend the vulnerability and destructiveness of the modern industrial food system which is heavily dependent on massive amounts of fossil fuel inputs (e.g. petroleum based pesticides and herbicides, fertilizer production and transportation) (Gever, 1991, Holmgren 2002). Permaculture food systems make efficient use of energy, labor and material resources and maximize synergistic relationships and yield. Along with this food system focus and partly because of it, the other principles of permaculture developed to facilitate the creation of sustainable communities.

‘Permaculture’ is about

an attitude to the land and living, which seeks to work with nature and natural systems to achieve a balanced harmonious ecosystem, within which humans exist as part of a larger network of co-operating life.

The four ideas investigated are:

- A garden for the production of food for humans: Helping to introduce the idea of urban food production to the city
- A garden for people sensitive to allergies: An environment where all can enjoy the benefits of the garden
- A garden for the well being of the human mind: A kind of sanctuary from the stress of inner city living
- A garden for the preservation and the regeneration of habitat: For native plant, bird and animal species, encouraging a more diverse and stable ecosystem for the inner city (Maibritt Pedersen 1999 / 2002)

permaculture is not the landscape, or even the skills of organic gardening, sustainable farming, energy efficient building or eco-village development as such, but it can be used to design, establish, manage and improve these and all other efforts made by individuals, households and communities towards a sustainable future. Because the focus of this report is on roof top gardens as a method of inner city permaculture, the specific benefits of roof top gardening have been considered.

a. International Reputation of Cities

- A city employing systems of roof top permaculture would gain the international reputation of being an environmentally leading city, and tourism could increase, due to the novelty factor involved with the idea of roof top gardening. Such a city could also be an example to other cities and become a centre for learning, and research into the area of roof top permaculture in an inner city context.

b. Human well being

- The psychological effects of more garden and nature zones are certainly very positive and a huge benefit for the citizens of the city.

c. Increased Life of the Roofing Membrane

- A layer of soil moderates extreme temperature swings experienced on the roof between day and night, and therefore the expansion and contraction of the roof will be moderated, and the life span of the roof will be increased. In England it has been recorded that:

'The effect of temperature regulation Can reduce roof temperatures by 40' C in summer, and raise winter temperatures from -20' C to -5' C.

- Because the roofing is covered, it is protected from harmful UV rays and conventional everyday wear and tear. Exposed flat roofs may require renewal after as little as ten years. There are documented examples of roofs under roof top gardens being in near perfect condition after fifty years and longer.

d. Energy Cycling

- By putting food or plant scraps that came from the garden, back into the same garden, all of the energy that it took to grow the food or plants is kept within the area to assist with the growing of the next generation of plants. The introduction of roof top permaculture creates a use for some of the city's organic waste through composting, thus reducing landfill loads.

e. Economics

- Economically, ‘any amenity such as a roof garden could easily add up to twenty percent value to a domestic property...’ which would also be true perhaps of commercial property.

f. Location and Tenure

- The relative nearness of roof gardens is a major advantage. Individuals or businesses cultivating their roof space do not have to make trips to and from allotments or other gardens, which saves time and energy (both human and transport).

- One of the problems associated with urban agriculture is the lack of tenure. Temporary garden plots are often displaced by what is viewed as more productive use of the land (such as car parks, bypasses, apartments etc.) Many gardens are labour intensive to set up and people may be reluctant to invest time in an area of which continued availability is not assured. Roof top gardens are not likely to face this dilemma and therefore offer greater security of tenure. (Maibritt Pedersen 1999 / 2002)

Permaculture strategies focus on the opportunities rather than the obstacles. In the context of helping the transition from ignorant consumption to responsible production, permaculture builds on the persistence of both a culture of self-reliance, community values, and the retention of a range of skills, both conceptual and practical, despite the ravages of affluence. The identification of these invisible resources is as important in any permaculture project as the evaluation of biophysical and material resources. While sustainable “production” (of food and other resources) remains the prime objective of permaculture strategies, it can be argued that permaculture has been more effective at pioneering what has come to be called “sustainable consumption”. Rather than weak strategies to encourage green consumer purchasing, permaculture addresses the issues by reintegrating and contracting the production/consumption cycle around the focal point of the active individual nested within a household and a local community. Although permaculture is a conceptual framework for sustainable development that has its roots in ecological science and systems thinking, its grassroots spread within many different cultures and contexts show its potential to contribute to the evolution of a popular culture of sustainability, through adoption of very practical and empowering solutions.(Holmgren)

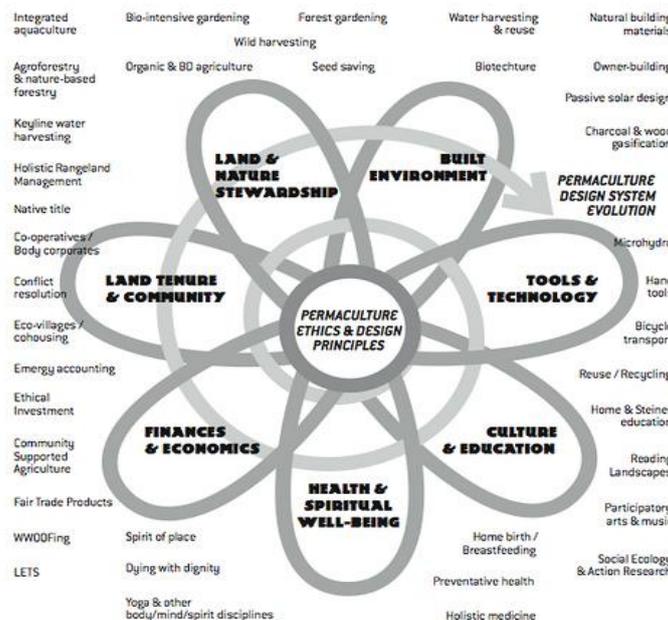


Figure 3: The Permaculture flower (Holmgren 2002)

3.1 Permaculture principles

The idea behind permaculture principles is that generalized principles can be derived from the study of both the natural world and pre-industrial sustainable societies, and that these will be universally applicable to fast-track the development of sustainable use of land and resources, whether that would be in a context of ecological and material abundance or one of deprivation. These principles can be divided into ethics and design principles.

Ethics act as constraints on survival instincts and the other personal and social constructs of self-interest that tend to drive human behavior in any society. They are culturally evolved mechanisms for more enlightened self-interest, a more inclusive view of who and what constitutes “us”, and a longer-term understanding of good and bad outcomes.

3.1.1 permaculture design principles

The scientific foundation for permaculture design principles lies generally within the modern science of ecology, and more particularly within the branch of ecology called ‘systems ecology’. Other intellectual disciplines, most particularly landscape geography and ethno biology, have contributed concepts that have been adapted to design principles. Fundamentally, permaculture design principles arise from a way of perceiving the world that is often described as ‘systems thinking’ and ‘design thinking’ (Holmgren)

Observe and interact: Beauty is in the eye of the beholder (i.e. systems thinking).

Catch and store energy: Make hay while the sun shines.

Obtain a yield: You can't work on an empty stomach.

Apply self-regulation and accept feedback: The sins of the fathers are visited on the children unto the seventh generation.

Use and value renewable resources and services: Let nature take its course.

Produce no waste: Waste not, want not.

Design from patterns to details: Can't see the wood for the trees.

Integrate rather than segregate: Many hands make light work.

Use small and slow solutions: The bigger they are, the harder they fall. Slow and steady wins the race.

Use and value diversity: Don't put all your eggs in one basket.

Use edges and value the marginal: Don't think you are on the right path just because it is well traveled.

Creatively use and respond to change: Vision is not seeing things as they are but as they will be. (Tomczak, 2007)

To apply these principles in the real world requires understanding them in the context of all the elements in the system that is being manipulated. These elements fall into the categories of, site components (e.g. water, earth, landscape, climate, organisms), energy components (e.g. technologies, structures, sources, connections), social components (e.g. legal aids, people, culture, trade and finance), and abstract components (e.g. timing, data, ethics) (Mollison 1988).

Both of these systems are very similar, even though the terms come from different disciplines; permaculture and home gardens respectively. Ecological gardening applies permaculture design to create sustainable home landscapes.

4. Permaculture Method Principle in Shiraz to become a Garden City

Iranian garden is the original output of Iranian life and mental interaction in their natural environment. On the other hand, Iranian garden is also the original output of Iranian life and mental interaction in their natural environment (Mansouri, 2005; Shahcheraghi, 2010). Especially in Shiraz that is known as Garden City.



Figure 4: Shiraz south west view, central zone: old gardens, and new construction

Shiraz is the sixth most populous city of Iran and the capital of Fars Province, with 1,455,073 inhabitants situated in southwestern Iran on the Roodkhaneye Khoshk (Dry River) seasonal river. It is found in the inland around 200 km from the Persian Gulf, at an elevation of 1,800 meters above sea level with a moderate climate and an active regional trade center for over a thousand years. Shiraz is the capital of Fars province, one of the most beautiful, historical cities in the world. Farsi (Persian or Parsi) the language of Ancient Fars (Pars), has become the official language of Iran (Persia). Different people have lived in the Fars province such as the Aryans, the Samis and the Turks, who worked together to form the Iranian culture. It is regarded as one of the oldest provinces of ancient Persia.

Shiraz is known as the city of poets, literature, wine and flowers. It is also considered by many Iranians to be the city of gardens, due to the many gardens and fruit trees that can be seen in the city. The economic base for Shiraz is commerce of products from the surrounding region, where grapes, citrus fruits, cotton and rice is produced. Of Shiraz own industries, cement, sugar, fertilizer, textile products, wood products, metalwork and rugs dominate.

Shiraz's climate has distinct seasons, and is overall classed as a semi-arid climate (Köppen BSh/BSk), though it is only a little short of a Mediterranean climate (Csa) summers are hot, with a July average high of 37.8 °C (100.0 °F). Winters are cool, with average low temperatures below freezing in December and January. Around 300 mm (12 in) of rain falls each year, almost entirely in the winter months, though in some cases as much as this has fallen in a single month (as in January 1965 and December 2004)[, whilst in the year from July 1965 to June 1966 as little as 82.9 millimeters (3.3 in) fell.

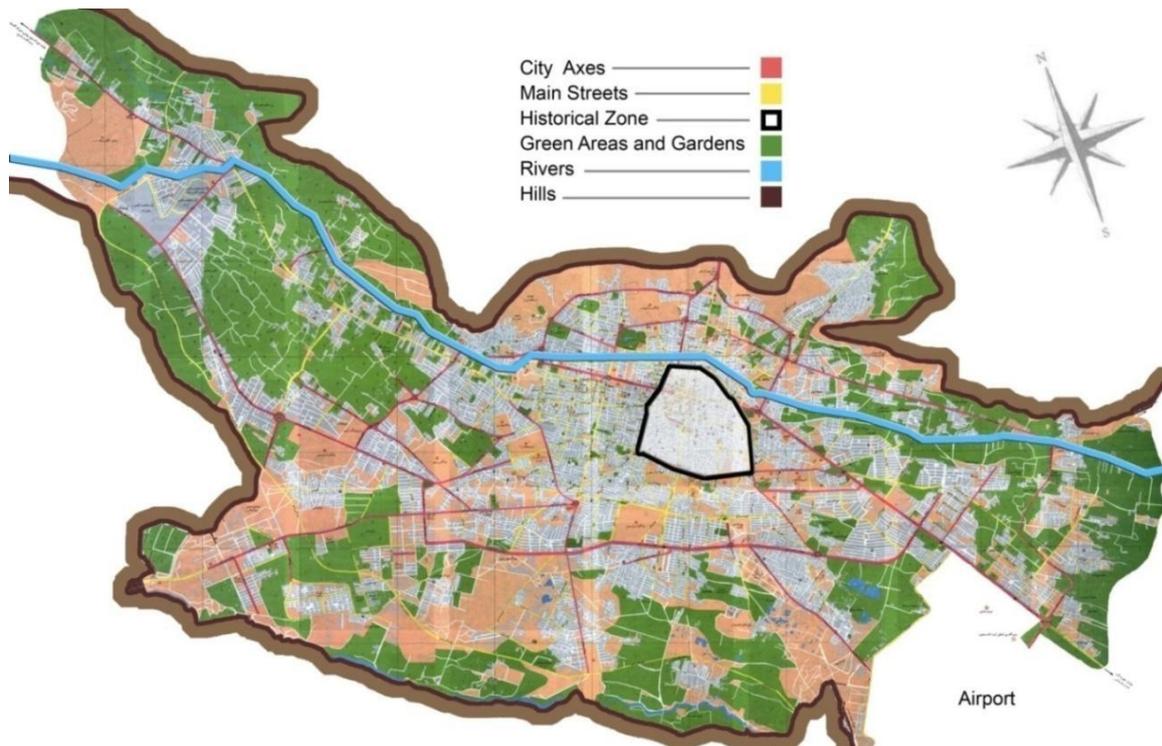


Figure 5: Shiraz Map

The wettest year has been 1955/1956 with as much as 857.2 millimeters (33.75 in), though since 1959 the highest has been around 590 millimeters (23.2 in) in each of 1995/1996 and 2004/2005. Shiraz contains a considerable number of gardens. Due to population growth in the city, many of these gardens may be lost to give way to new developments. Although some measures have been taken by the Municipality to preserve these gardens, many illegal developments still endanger them. As we can see because of its context and reputation of culture and long history, permaculture design can be done on it. Therefore we can renew and rebuild gardens through another way.



Figure 6: Shiraz north east view, near Dry River (Seasonal River)

Shiraz has some problems to serve daily transportation. This causes some urban projects to widen the streets in the central zone. In reality, the strategy has not been implemented in

many cases. Furthermore, the widespread patterns of physical growth have been acted So many gardens have been destroyed. In addition to opportunities for people to be connected to the identical built environment, Permaculture advantages can preserve human life from further damages. Roof gardening, greening open space, Pedestrian realm of the city is a great opportunity for citizens to reconnect to their history, environmental identity and cultural activities. It represents a different view of life to visitors which is safer, more beautiful and more convenient.



Figure 7: Green roof sample in Shiraz,

Environmental preservation, riverside and productive gardens Shiraz has over 400 hectares of fruit productive inner-city gardens inside its metropolitan area. Most of these gardens are located in North- West of the city in "Ghasr-Dasht" area. A few of these gardens have expensive buildings within them.

Lemon and orange trees are traditionally grown in private properties (e.g. Bagh-e- Eram) as well as public areas as. There are also local plantains trees grow up without any special care. The city river that is a seasonal waterway has a landscape which needs to be promoted as a linear recreational space for citizens. By some small changes in landscape design and safety promotion, it has potential to improve citizens' health.

There is a cultural event in each February (Bahman) when people plant trees one month before the spring, the so called "planting ceremony" (jashn-e-derakhtkari). Shiraz has fertilized soil and is one of agricultural centers of the country. It has numerous food production industries, as well as the potential to improve it further. It is suggested that the waste management system, food production and packaging industries must be taken into consideration in an integrated manner.

5. Conclusion

While the benefits of roof gardens are somewhat unquestionable from the environmental point of view, the cost effectiveness may need to be looked at in order for roof gardens to be widely adopted in our region. In conclusion those who do not garden may list time constraints, lack of access to land and lack of knowledge as reasons why they do not garden. Government at all levels must recognize the benefits of greening rooftops and

support initiatives to encourage this activity across the country. Developers, policy makers, architects, and the public require performance information on the technology, benefits, and costs involved. Even when a city recognizes the benefits of rooftop gardens, there is still the need to encourage the construction of green roofs by making them a financially viable option.

Iran has not yet caught on to the benefits of promoting green roofs and actions must be taken to encourage governments at all levels to support these initiatives. There are a number of local organizations in Shiraz that are working to promote the benefits of locally produced food and the potential for urban agriculture. Rooftop gardening is an integral part of this food production system and should be increased in Shiraz.

References:

1. Dr. Samina Raja, (2009), Queen City Gardens Plan Planning for Community Gardens in the City of Buffalo, Department of Urban and Regional Planning, State University of New York at Buffalo, the Canadian-American Studies Grant Program, PD 592
2. Bremer, A., Jenkins, K. & Kanter, D. (2003). Community Gardens in Milwaukee: Procedures for their long-term stability & their import to the city. – Milwaukee: University of Wisconsin, Department of Urban Planning.
3. Sherer, P.M. (2006). The benefits of parks: Why America needs more city parks and open space. Retrieved October 31, 2006, from Uhttp://www.tpl.org
4. Wong, Michael, (2008), Environmental Benefits of Green Roofs, Technical Director, Hitchins Group Ltd.
5. Hobbs, Heather, (2002), Greening Rooftops in the Garden City, University of Victoria, BC
6. Peck S, Kuhn M. Design Guidelines for Green Roofs. Ontario Association of Architects and CMHC. Retrieved 1 April 2009 at: www.cmhc.ca/en/inpr
7. Kohler, M., (1989), Ecological Analysis of Extensive Green Roofs, Band XVIII, pp. 246-255.
8. Kuhn, Monica E. (1995). 'A Growing Rooftop Resource.' Natural Life Magazine 45: Accessed through March 2002.
9. Kuhn, Monica E. (1996). 'Roof Greening.' Eco Architecture 2: Accessed through March 2002.
10. RGRG (Rooftop Gardens Resource Group) (2002). Website accessed through March 2002.
11. Meletist, Zoe and Beverley Webster (1999). 'An Overview and History of Rooftop Gardening.' Environmental Studies Seminar 182451. Accessed through March 2002.
12. GRHC (Green Roofs for Healthy Cities) (2002). Website accessed through March 2002.
13. Welsh, Jennifer and Rod MacRae (1998). 'Food Citizenship and Community Food Security: Lessons from Toronto, Canada.' Canadian Journal of Development Studies, XIX Special Issue: 237-256.
14. Guberman, Connie (1998). 'WEspeak.' WE International 44/ 45: 4-5.
15. Tomczak, Jay, (2007), Edible Forest Garden Permaculture For the Great Lakes Bioregion Background, Development and Future Plans for The Michigan State University Student Organic, East Lansing, MI 48824

16. Holmgren, D. 2002. Permaculture: principles and pathways beyond sustainability. Holmgren Design Services. Victoria. p.286.
17. Gever, J., et al. 1991. Beyond oil: the threat to food and fuel in the coming decades, third edition. University Press Colorado. Denver. p.351
18. Creasy, R. 1982. The complete book of edible landscaping. Sierra Club Books. San Francisco, CA. p. 365.
19. Mollison, B. 1988. Permaculture: a designer's manual. Tagari Publications. p.575.
20. Pedersen, Maibritt, (1999 / 2002), Roof Top Permaculture, Transformation of the Inner City Environment
21. Tomczak, MSU SOF Edible Forest Garden, July 2007, pg 17
22. See as examples:
23. Rooftop Garden Project: <http://rooftopgardens.ca/en/techniques>;
24. Urban Habitat Chicago:
<http://www.urbanhabitatchicago.org/projects/true-nature-foods;Vancouver>
25. YWCA: <http://www.cityfarmer.info/rooftop-food-garden-ywca-vancouver-bc-canada>;
26. Community Growers CSA, Milwaukee:
27. <http://www.milwaukeeenaissance.com/CommunityGrowersCSAFarm/HomePage>
28. Kuhn, Monica (1996). Roof Greening: <http://www.interlog.com/rooftop/greening.html>

Development policy or palliative therapy? Investing in the quality of public spaces in the distance from large urban centersⁱ

Anna GOLEĐZINOWSKA, Department of Urban Design and Regional Planning
Faculty of Architecture, Gdansk University of Technology, Poland

Synopsis

The paper is concerned with two main issues: the phenomenon of an extensive network of medium-sized towns in Poland, and the development of strategies based on the quality of public spaces.

Poland has an extensive network of small and medium-sized towns. This second group - providing access to higher order services - influences the quality of life of a large part of the country's population. The aftermath of system change in 1989 was much more severe for smaller urban centers than for areas of metropolitan potential. The consequences of this transition shock are still evident.

Against this background, a priority for improving the quality of public spaces (this tendency has occurred around 2000 and intensified after the Polish accession to the EU in 2004), seems to be particularly worth verifying. Can the new quality of public space become an important development factor? Is the new image of the town an effective tool for mobilizing potentials or only relieves the symptoms of collapse?

The case studies were made for the four towns (Ustka, Pruszcz Gdanski, Tczew, Chojnice) in which improving the quality of public space was designed to achieve a different development goal. As the point of reference were used selected programs referring to the quality of public space implemented in areas of comparable settlement structure - Germany and Denmark.

The results show that under certain conditions the answer to the above questions can be positive. Furthermore, better results were achieved in those cases, in which the main investments in the public spaces have carried out without use of the EU funds.

1. The situation of small and medium-sized towns in the context of political changes in Poland

The Polish settlement network is characterized by high density of towns in the absence of global nodes and European engines (ESPON 2006). More than a dozen largest urban centers by far excel in contributing to the country's economic growth but it is in the space of small and medium-sized towns where a large part of the population resides. Thus, the smaller towns and connected rural areas significantly influence the direction of local development and, owing to their large number, they become an important component of regional growth.

Studies conducted in various parts of the country confirm that the small and medium-sized towns whose economies would be shaped in the past by a single employer or a single branch of industry suffered the effects of the transformations started in 1989 more severely than the larger multi-functional centers. It should be noted that in the period of socialism (particularly in the 60s and 70s), under the influence of the so-called "socialization of the economy", smaller urban centers were subjected to deep transformations of the traditional economic structures, socio-economic connections and forms of developing and using urban spaces (Heffner 2008).

Against the background of the common world trend of moving from the industrial to post-industrial identities, the case of Poland of the 90s was distinguished by the superimposition of the economic crisis on the administrative and organizational crisis: what was once a common state resource was divided into the state and municipal ownerships, which made it so much more difficult to formulate common strategies for the development of urban space.

A significant proportion of state-owned enterprises developed in or on the land of former nineteenth century factories – they were built on the then outskirts of towns, usually near the railway station. At the time of the collapse of industry in the late twentieth century, properties excluded from industrial production were already part of the downtown area. Liquidation of large enterprises was particularly difficult for local communities because such companies would often maintain also cultural and sport centers as well as educational units.

Post-military towns – bases of the Soviet Army (towards the end Army of the Russian Federation) or bases of national armies of the Warsaw Pact, closed down or adapted for civil use in the first half of the 90s – were urban structures characteristic for Central and Eastern Europe (Jarczewski & Kuryło 2009).

The spatial gaps described above needed filling for reasons related not only to urban planning but also to socio-economic factors – the post-industrial/post-military towns needed to acquire new functions that would provide property tax revenues to the towns and employment to the inhabitants. In the case of small and medium-sized the task turned out rather difficult inasmuch the centers were not significantly more attractive than the outskirts, so private capital was not interested in costly and procedurally difficult investment projects on brownfields areas.

Considering today's settlement processes, we are witnessing depopulation of urban spaces and the smallest towns with increasing population density of large and medium-sized towns and their immediate vicinityⁱⁱ (Ministry of Regional Development 2011). Regardless of the present migration, most of the Polish population remains outside major centers.

Sustainable development of the country's polycentric settlement network was to be supported by the territorial reform of 1999. Within the reform, self-governing voivodships (regions) and intermediate-level poviats (counties) were created in addition to the existing communes.

Thanks to these changes, foundations were to be laid for the "*conditions for the reconstruction of local ties and restoration of the role of small and medium-sized towns as active centers of community life with a view to modeling regional development*" (Kulesza 2000). The established network of provincial capitals was a compromise between scientific concepts and aspirations of local communities and as such its effectiveness is subject to criticism. Current research (Guzik 2011) has shown that due to the actual role they play for the surrounding area, some poviat capitals fail to serve their functions, while other areas lack a clear poviat center.

The group of poviat towns is very diverse in terms of population. In most voivodships the populations of the smallest poviat capitals oscillate around 10,000 while in the largest ones they do not exceed 100,000. In less urbanized voivodships, there are also poviat capitals just over 5,000 inhabitants. The largest group of poviat centers is made up of poviat centers within the range of 10,000-20,000 inhabitants.

2. A new role and quality of public space in the contemporary formal and legal environment

In new social and economic conditions, many medium-sized towns try to redefine their role and place in regional space structures, looking for new development impulses and opportunities to improve life conditions of local communities and strengthen their role of translocal or sub-regional centers of progress.

One of the elements of creating new development strategies is evaluating the potential in urban areas. After 45 years of centrally planned economy and sudden shift to local governing and free market economy, in the 90s living space for town citizens was degenerated not only in terms of technical and compositional aspects but also morally. Post-war reconstruction and development often came in the form of prefabricated large panels block of flats, which stood in opposition to the scale and structure of town centers (Gzell 1996). Devoid of proper restoration works, historically shaped areas were gradually appropriated by other functions, mostly by communication and trade. The notion of common good was disgraced by overuse in nomenclature and rhetoric of the then authorities.

According to Marszał & Kozłowski (2009), achievement of translocal functions of development centers is possible by means of actions aimed at three target groups:

- Improved competitiveness of the economic base and development of stable work places
- Improved quality of the municipal space (not only in the physical but also social dimension)
- Development of human capital in the area.

The increased role of the physical quality of urban space in the shaping of competitive image as in opposition to the scale of the center is indicated by Markowski (2006). In his opinion, in case of smaller towns, a key role is played by the physical attributes of their urban space and not such features as innovations or knowledge-based economy.

Medium-sized towns' investment policies seem to confirm the above statements concerning the quality of urban tissue. Engagement of efforts and means in reconstruction or construction of central squares and parks as well as other recreational areas are notable here.

The phenomenon of interest in the public space quality in medium-sized towns is quite surprising as it takes place in conditions of degradation of spatial development in legal and organizational realities.

Implementation of the regulations of the free market economy and decentralization of the administrative system was accompanied by, de facto, deconstruction of the spatial development system. The constitutional primacy of ownership rights results in poor protection of public interest in the act on spatial development and planning as well as related regulations (Jędraszko 2005). In effect, shared areas are taken possession of and settlement development is uncontrolled and characterized by low service quality and deurbanization of town centers.

The situation pertaining to the crisis management of town areas does not look any better. Despite works initiated in the 70s, Poland still lacks an act on revitalization. Local authorities form local revitalization programs on non-compulsory standards. The first wave of such documents took place in the mid-90s and was stimulated by the development of partnership relations with towns from Western parts of Europe and transfer of good practice on the spatial policy. The programs were executed from own means of towns in cooperation with housing cooperatives, and among the pioneers the majority was composed of medium-sized towns. The second wave of revitalization works was triggered around 2004 and was connected with requirements of the European Union pertaining to financing of complex revitalization enterprises. Those documents were often modified after 2007, in consequence of new EU programming and new guidelines. The fact confirms a lack of any (even informal one) national policy of towns' revitalization - the Polish model remains dependent on financing within the Cohesion Policy and the key decisions are reached on the European, regionalⁱⁱⁱ and local levels. Because of formal issues, the executed projects did not include public-private partnership. This option has been introduced gradually in new regions since 2009 (presently it is available in five regions) within projects executed with support of the JESSICA initiative^{iv}.

Passivity of central authorities come on top of poor urban development legislation when it comes to pilot programs or other forms of promoting good practices in spatial development.

In the light of the above, it is surprising that medium-sized towns, devoid of private capital and matter-of-content umbrella of the state, invest their own funds in upgrading the quality of public space. This policy is also present in regional and nationwide contests for the best public spatial development.

3. Case studies

Medium-sized towns constitute a very versatile collection. Better quality of public space may contribute to different strategic development aims which are illustrated by the selected case studies: post-industrial tourist area, new town center structures (increasing competitiveness of towns in relation to vast areas of suburbanization), sub-regional centers inflicted with deurbanization and a shaping sub-regional center.

The cases have been selected on the basis of a cross-sectional analysis was carried out for 22 medium-sized towns^v of socially and economically diverse Pomorskie Voivodeship (Golędzinowska 2013).

Name	Population ^{vi}		Change in the period 1995-2012		Status of poviat capital	Development goal related to quality of public spaces
	1995	2012	Units	Percentage		
Ustka	17213	16379	-834	-5,09%	-	Popular holiday resort
Pruszcz Gdański	21318	28621	7303	25,52%	+	Residential area with a distinct identity
Tczew	60615	60769	154	0,25%	+	Sustaining a competitive sub-regional centre
Chojnice	39872	40306	434	1,08%	+	Shaping a competitive sub-regional centre

Fig. 1. Profile of selected towns

3.1. Ustka

Ustka is a small coastal town affected by major development constraints. The fall of large enterprises engaged in the maritime industry (mainly boatbuilding, fishing and fish processing) resulted in problems of social, economic as well as spatial nature. The town boasts spa traditions reaching back to the 19th century but in the times of the so-called real-socialism, the quality of this function deteriorated considerably.

An important development factor is the proximity of Słupsk with a population of nearly 100,000. The residents of Ustka are thus provided with access to higher-end services. The residents of Słupsk, in turn, treat Ustka as their leisure center. The ongoing urbanization between Słupsk and Ustka (Rydz, Jażewicz 2005) and the concept adopted by the two towns' authorities to have a "bi-city" developed may cause that Ustka's space will increasingly serve the residents of Słupsk for recreation purposes and as an attractive place to live.

The town has its historical center, the district of Ustka Stara, formed on a plan of a regular orthogonal grid. Until recently the streets of Ustka were dominated by traffic. The town shows the highest population density and it suffers from high unemployment (Jażewicz 2007). Given the age of the urban development and limited financial means of the town's residents and

authorities, there is a serious renovation inadequacy in the area of Stara Ustka. Most of the historical district is situated in an intermediary spa zone – with the exception of the vicinity of the spa facilities in the eastern part of the town covered by a program of strict protection.

Ustka's port, the chief urban interior emerging on both sides of the river Słupia, is burdened with issues of a different nature. In effect of the above-mentioned collapse of maritime industries, vast areas of the ports turned into unused land. The smaller, eastern part of the port is adjacent to the historical center and it is more favorably situated in the intermediary spa zone. Thanks to its convenient accessibility and neighborhood of popular tourist destinations, the area quickly gained new functions. Conversely, the western part neighbors the extensively developed district of Ustka Rozwojowa (Eng. developing Ustka) and woodland – it is situated in the third, least rigorously protected spa zone. Weak transport connections with the eastern part of the town constitute a serious barrier to the zone's development.

In the 1990s, the local authorities ambitiously approached the subject of shaping the spatial development policy, despite its small scale. In 1995, a team of experts in environmental protection, economics, spatial development, transport and logistics engineering were commissioned to draw up *The Strategic Eco-Development Program for Ustka* (Gerstmann et. al.). In effect of their work, the team developed a comprehensive detailed document that indicated directions of changes consistent with the paradigm of sustainable development. According to the document, the priorities of the town's policy were, among others, development of the town's tourist functions, development of the port and improvement of the quality of the residential function. The program was adopted by the town council in 1996. However, due to strong restriction of a financial nature, few of those plans were actually implemented.

In 2001, the self-government of the newly created Pomorskie Voivodship incorporated the development of the Fish Auction into the operating program for the years 2001-2002. The role of the auction developed in the western part of the port was to rescue the fishing sector and, indirectly, also to strengthen the translocal role of Ustka. In view of the strong dependence on external factors such as the catch quota imposed by the European Commission, ever since its launch in 2004 the auction has been coping with financial problems and has had but a small impact on the environment (Czapliński 2012).

Along with Poland's accession of the European Union and accessibility of programs co-financing selected development projects, the town undertook to implement a number of modernization projects, narrowing a little the scope of the targets set out in *The Strategic Eco-Development Program*.

The Local Revitalization Program for Ustka Commune adopted in 2005 provided for the district of Ustka Stara. One of its priorities was to stop the decline of tourism (Bugajewska & Warsińska 2009).

The first phase in the implementation of the revitalization program concerned the former fishing settlement. The activities included, above all, modernization of traffic infrastructure, improvement of the quality of green areas and preservation of the typical half-timbered buildings. Most of the work concerning the arrangement of streets and parks was carried out with the use of funds from the Integrated Regional Operational Program 2004-2006. The reconstruction and conversion of the district's main traffic line into a promenade was supported with funds from the "Lithuania, Poland and Kaliningrad Region of Russian Federation Neighborhood Program". In order to preserve the region's landscape with its typical huts, activities were undertaken that were perceived as innovative but also controversial in the Polish conditions. Those efforts have been continued since 2004, funded exclusively from the commune's budget. Because of a very bad condition of the huts, in the majority of cases inventories are made and the huts are demolished and reconstructed. As part of the communal resources, the buildings are put up on sale in open tenders. This way

the commune obtains funds for new projects. The residents of the buildings are transferred to public housing projects in other parts of the town.

Given the selected (revised) goal - halting the decline in tourism – the town's investment policy aimed at improving aesthetics and comfort of using areas with a tourist potential turned out to be a successful form of intervention. Nevertheless, there are still challenges to be faced, like those connected with the development of the western port area and the seasonal changeability of the historical center under the process of gentrification.



Fig. 2. Reconstructed huts of Ustka Stara
Fig. 3. New waterfront at east side of former port area.

3.2. Pruszcz Gdański

Unlike the case described above, Pruszcz Gdański is on the path of fast development attributed chiefly to its excellent location in relation to the large harbor of Gdańsk and the transportation routes connecting the town with the center of the country – roads number 6 and 1, exits from A1 highway and the railway network. The competitiveness of the town is improved also by the presence of large areas available for development – including the post-military areas in the central part of the town.

Similarly, investments in public spaces turned out to an important element to the town's development strategy. However, this time it was all about averting a crisis situation.

One shortcoming of the functional-spatial structure of the town was lack of a historically formed public space focusing the life of the local community. There were some remains of a rural square along the present national road and a square in the center of a socialist realist project performing administrative functions but those spaces were used chiefly as passageways for cars and pedestrians and as such were devoid of human interactions that are typical for a properly functioning public space.

After the decentralization of the system of spatial planning that took place in the early 90s, thanks to the aforementioned spatial properties the town with the adjacent rural areas became a strong pole of suburbanization. Migration involved both residents and business entities. In view of the lack of space integrating the community, there was a risk of the town being perceived as a spatial extension to the new residential district void of a clear identity – Gdańsk Południe.

The *Development Strategy of Pruszcz Gdański Up Until 2010* placed strong emphasis on population growth – it envisaged a population of as many as 25,000 inhabiting the town in 2010, while the 2007 population already was 25,143 (Local Data Bank 2013). In order to make the town's residential offer more attractive in relation to the offers of other communes neighboring the agglomeration of Gdańsk, the document spoke also about the necessity to develop areas for leisure and integration, including the necessity to complete the work over a new center, for which first preparations had already been made.

In the post-military areas a system of crossing pedestrian routes and adjacent service-residential quarters were designed. The location of the land along the axis of a socialist

realist complex, national road no 1, the river Radunia, the town's Sport and Leisure Center and a park predestinated the area for this kind of spatial development. The town authorities decided to organize a competition for the architectural and urban concept. One of the partners in organizing the competition for the project was the Polish Association of Architects, which was to ensure a high quality of entries. This method of work made it possible to work out a very detailed spatial development plan, providing for the organization of public space. Public spaces named in the document were to be developed by the town, while the surrounding quarters were to be developed through private initiative.

First buildings were carried out on single plots of land, with a view to creating consistent quarters in the future. However, there was difficulty coordinating the particular activities of the investors and eventually the decision was made to put up whole quarters on sale (Pancewicz 2009). The development of the public space itself followed the development of the quarters. The basic phase was completed in 2007 and in 2012 the center and the town park were successfully connected within one axis. The projects were carried out without support from the EU, but the town used such funds when carrying out purely tourist or recreational projects such as the development of the theme park "Faktoria Rzymska" ("Roman trading post") and walking and bicycle routes within the so-called Amber Route.



Fig. 4-5. New town center in Pruszcz Gdański.

3.3. Tczew

As a result of the restructuring of the Polish State Railways (PKP), which was the largest employer in the region, at the beginning of the 90s the town found itself in a crisis situation. With many people self-employed in services and small-scale trade and with the location of a special economic zone, the problem of unemployment was significantly alleviated but the new business entities were chiefly located in the western and northern parts of the town, separated from the historical center by railway lines. Apart from the external factors contributing to the fall of the Old Town, we should mention also the major problem in the poor technical condition of public spaces and the surrounding historical buildings.

In the mid-90s, the local authorities undertook measures to increase the attractiveness of the center and to avert the ongoing deurbanization while changing the image of the town, from that of a railway town to that situated on the river Vistula. The aim of the first works (1995-1997) was to improve the technical condition and safety of squares and streets – in particular for pedestrians. In terms of the search for a function of the district that would make it attractive in relation to the retail and service centers located in other parts of the town, we should point to the town's efforts to develop cultural and recreational functions. In the years 1997-2002, the Tczew Cultural Center was modernized, and the years 2006-2007 brought the modernization of the Museum of the Vistula River and establishment of an institution vested with the role of representing the cultural heritage of the town and the surrounding area of Kociewie - in an attractive way, in accord with the modern requirements.

The cultural infrastructure was strengthened especially in the historical area of the Old Town. The open spaces around it were adapted for the recreation of residents and potential tourists. In 1999, the modernization of the Town Park established in 1998 started. In 2003,

work began to create a new public space that would serve as an extension of the public space in the center toward the river – the Vistula Boulevard.

The Local Revitalization Program adopted in 2004 provided for continuation of the policy of improving the attractiveness of the historical center. The current revitalization program is pursued within the Regional Operational Program of Pomorskie Voivodship for years 2007-2013, providing for upgrade of certain public spaces, location of business-support institutions as well as improving the quality of the residential resources.

The program hasn't been completed yet and it difficult now to assess its effects. The previous activity resulted in considerable growth of the Old Town, especially the boulevard as the place of the local community's recreation and integration. However, investors did not show any significantly larger interest in this area.



Fig. 6. Vistula Boulevard
Fig. 7. Museum of the Vistula River

3.4. Chojnice

The town of Chojnice is situated approximately 90 km from the closest large urban center. The extensive wood and metal industries after the privatization survived the economic transformation – a remarkable fact, bearing in mind that the town of Człuchów, situated just 14 km away, was indicated in the late 90s as Poland's unemployment pole.

The authorities of the town decided to take advantage of its relatively good economic situation and build its position as a service center of sub-regional significance – the new image of the town was to be an essential element of this strategy (Finster, 2009).

Within the works carried out in years 2001-2002, the aesthetics of the center's historical space was changed and revamped: the discordant architectural elements were either removed or modified and the functional layout was adjusted, limiting traffic and improving the comfort for pedestrians and cyclists. The most important and most spectacular part of the task was the reconstruction of the façade of a multi-family residential block occupying about 90 per cent of the southern frontage of the Old Market Square. Public spaces and the façades of public buildings were modernized with the use of municipal funds, while private owners were offered incentives in the form of free façade modernization designs and subsidies for renovation works.

The activities presented above are often referred to in the literature of the subject as "revitalization", but they were actually implemented without any revitalization plan in force. A relevant program was adopted as late as in 2004, within preparations for absorption of EU funds. Further projects related to the renovation of the most typical elements of the landscape were carried out mostly with subsidies from the EU cohesion fund – nevertheless, only one of them was carried out as a "comprehensive revitalization project" – the conversion of the former hospital into an educational center (media library and the seat of cultural and social societies) (2005-2007). Other projects were co-financed with funds provided to increase the attractiveness of tourism – for example, repair of the minor basilica or adaptation of a post-Jesuit complex for cultural purposes.

The rank of Chojnice's service functions located in the historical center may serve as evidence for the success of the town's image policy. What is more, after the modernization of the center the town attracts much more attention – in both research studies and in the mass media.



Fig. 8. The Old Market Square before renewal (source: Municipality of Chojnice).

Fig. 9. The Old Market Square current state.

4. Experience of western neighbors

In order to assess the purposefulness of the Polish towns' public space policies, it is worth referring to other areas of the European Union with similar settlement characteristics and climate conditions but different planning systems and development priorities – Denmark and Eastern Germany.

Following the German reunification in 1990, the town centers were affected by rapid depopulation. The reasons for this situation are found in a mass migration to the western part of the country and also, like in Poland, in migration of many families from downtown to suburban areas. To alleviate the crisis, the system of comprehensive renovation of degraded urban districts, started in Western Germany already in the 70s, was now to be applied also in the east of the country. The quality of public spaces is understood there as an evident feature of a well-run spatial policy.

The federal government and the governments of the constituent states have invested a lot of effort and huge sums of money in improving the quality of life in the eastern part of the country. In 1999, the federal government initiated *Soziale Stadt*, which was aimed at a comprehensive renovation of centers in eastern German towns. The program provided for improving infrastructure and boosting social and economic development. In 2001, *Stadtumbau Ost* was initiated, a program providing for scheduled demolitions of abandoned buildings and adaptation of land for social purposes (Bryx & Jadach-Sepiało 2009).

From the point of view of the town's competitiveness, it turned out to be a failure – the programs did not constrain the rapid shrinking of towns. In a small number of them, the process was stopped or restricted considerably – the development of new services and production played the key role here. However, the assessment of the phenomenon changes after we take into account the basis of the German state – the constitution that requires the residents are ensured decent living conditions regardless of where they live.

One important element of the German spatial policy is knowledge transfer and continuous improvement. The above mentioned programs are accompanied by extensive analyses and publications presenting their results. Periodical international construction fairs (*Internationale Bauausstellung*) support the introduction of innovations in spatial planning and the construction sector. In the context of strategies for transforming public spaces in medium-sized towns, the Building Exhibition Urban Redevelopment Saxony-Anhalt organized in 2010 is notable. The project covered 19 shrinking towns of this relatively sparsely populated state. The largest two towns each had about 230 thousand inhabitants, with the following towns in the 90-2.5 thousand range. In each town a different set topic was pursued, including renovation of a historical center of a unique cultural value, landscape adaptation of transformed areas or creation of a family-friendly town.

Denmark is a country of small and medium-sized towns in which the transformations of urban space are different in nature. The spatial planning system has been placed within the program of environmental protection in a broad sense of the term. Popularity of public spaces in this country comes from both the routine of active life (moving by bicycle, on foot) and from their architectural quality ensured by the local authorities, who understand the significance of this feature of urban space for the local communities^{vii}. The content and walkability of Danish towns is determined also by restrictive provisions of relevant national regulations.

Under the Danish planning act, the commune's strategy 'shall contain the municipal council's political objectives for the future work within reducing the negative effects of human activity on the environment and promoting sustainable urban development and urban regeneration.' Strategic planning at both local and regional levels must comply with the provisions of Local Agenda 21.

The act provides a number of tools protecting the traditional vitality of public spaces – e.g. by maintaining compact settlements (strict limitations of urban sprawl), locating trade in town centers, regulating the maximum size of retail space – in case of small towns this regulation is much more strict.

It also provides individual provisions for different regions - depending on the degree of risk of various phenomena. In case of the Greater Copenhagen area, the development of compact centers shaped in correlation with the public transport system (in particular the urban train) is strongly promoted. The Ministry of Environment, basing on a statistical method, conditions the possible location of workplaces on the availability of walking to the train station.

Like in eastern Germany, in 1996 the national authorities launched implementation of a program of comprehensive revitalization of degenerated urban districts called *Kvarterloeft*. The program has been financed mostly from central and municipal budgets. However, private stakeholders were also involved (Munk 2007).

Its main purpose was social inclusion, provision of decent housing and crime prevention but transformation of public space was a popular tool for the implementation of the program – e.g. Aalborg East, Vollsmose.

As in the case of the projects in Germany, an important part of *Kvarterloeft* was its constant evaluation and modification to fit the diagnosed needs but there was also an image element – in order to have inhabitants identify with the changes taking place around them (Tverskov 2007).

5. Conclusions and recommendations

An important element contributing to the success of the case studies describing medium-sized towns is their pioneering nature. This is especially true of Pruszcz Gdański and Chojnice, where the town authorities started modernization at the break of the 20th century without access to any external funds. We can attribute it to the social need for beauty in the urban space after years of the robust conditions of the centrally planned economy. The first activities were focused primarily on improving the competitiveness of the town against the background of the rural or amorphous suburban areas – as a place of residence, a tourist or service center. The matter of local community building seemed to be secondary. At present, however, it is necessary to re-evaluate such development strategies.

In the period of availability of the highest EU subsidies so far (2007-2013), many medium-sized towns were encouraged by the successes of their predecessors and the ease with which funds could be obtained and undertook activities aimed at improving the quality of public spaces. Among them, there were well thought-out projects as well as quite accidental ones – mindlessly copying solutions successfully completed in different conditions.

Considering the fact that the projects were carried out with little organizational and intellectual support from the central authorities, the experience of the Polish local centers in planning development by upgrading public spaces should be appraised favorably. Nevertheless, in the context of departing from EU subsidies replaced with repayable funds, the expected smaller access to funds after 2020 and economic issues that medium-sized towns still cope with, it seems necessary to draw up a support system at the national level.

The first general and overarching issue is to strengthen the role of the state in spatial planning. Recently, planning was moved from the competences of the Ministry of Infrastructure, criticized for inefficiency, to the competences of the Ministry of Regional Development, which now stimulates Poland's largest spatial transformations thanks to granted subsidies. In terms of the organization of the work, it seems a step in the right direction. However, thus far it has not resulted in any significant legislative changes.

In the context of the *Europe 2020* strategy, for which inclusive growth and settlement network issues are some of the chief concerns, it seems necessary to develop a legal framework that would trigger a comprehensive renovation of public spaces and surrounding housing resources. As in the case of the depicted Western experience, the state should be involved in this process financially and organizationally, breaking free from the dependence on EU funds granted subject to principles changing every seven years. The field where it is worth drawing on Western practices concerns the shaping of intellectual resources of programs aimed at upgrading urban spaces and image-improving efforts helping residents to better identify with the changes in progress.

References:

- Bryx, M. & Jadach-Sepiało, A. (2009) *Rewitalizacja miast w Niemczech*, Cracow: IRM.
- Bugajewska, M. & Warsińska, B. (2009) „Rewitalizacja w odniesieniu do obiektów będących w zasobach komunalnych w Ustce”, *Specyfika odnowy małych i średnich miast w Polsce*, (ed.) J. Poczobut, Cracow: Stowarzyszenie Forum Rewitalizacji.
- Czapliński, P. (2005) „Postawy społeczności lokalnych wobec działalności przemysłowej (przykład małych miast subregionu słupskiego)”, *Problemy rozwoju małych miast w wymiarze lokalnym i regionalnym*, K. Heffner & T. Marszał (ed.), *Biuletyn KPZK PAN*, vol. 226, Warsaw: KPZK PAN.
- Czapliński, P. (2012) “The local center of first sale as a tool for fish market regulation case study of LFSC – the fish auction in Ustka”, *Słupskie Prace Geograficzne* vol. 9, Słupsk: Akademia Pomorska w Słupsku.
- ESPON (2006) *ESPON Atlas. Mapping the structure of the European territory*.
- Finster, A. (2009) „Rola przekształceń w przestrzeni publicznej w rewitalizacji miasta Chojnice”, *Współczesne kształtowanie przestrzeni publicznej województwa pomorskiego*, A. Goleđzinowska (ed.), Gdańsk: Urząd Marszałkowski Województwa Pomorskiego.
- Gehl, J. (1996), *Life between Buildings: Using Public Space*, 3rd edn., Copenhagen: Arkitektens Forlag.
- Gerstmann, E. et al. (1996), *The Strategic Eco-Development Program for Ustka/Strategiczny program ekorozwoju Ustki*, Gdynia: Instytut Ochrony Środowiska.
- Goleđzinowska, A (2013) “New Quality of Public Spaces as a Stimulant for Socio-Economic Development – the Specificity of Medium-Sized Towns”, *Proceedings REAL CORP 2013*, Rome 20-23 May 2013.
- Guzik, R. (2011) *Czynniki i ograniczenia rozwoju miast województwa pomorskiego w świetle relacji przestrzennych*, Gdańsk: expertise for the Pomorskie Voivodeship.

Guzik, R. (2011) „Dostępność komunikacyjna wybranych miast Małopolski 2011-2020”, Małopolskie Obserwatorium Polityki Rozwoju, Gracow: the Małopolskie Voivodeship.

Gzell, S (1996) Fenomen małomiejskości, Warsaw: Akapit-DTP.

Heffner, K. (2008) „Funkcjonowanie miast małych w systemie osadniczym Polski w perspektywie 2033 r”. Ekspertyzy do Koncepcji Przestrzennego Zagospodarowania Kraju 2008-2033, vol. I. (eds) K. Saganowski, M. Zagrzejewska-Fiedorowicz, P. Zuber, Warsaw: Ministry of Regional Development.

Jarczewski, W. & Kuryło, M. (2009) „Rewitalizacja terenów powojkowych”, Przestrzenne aspekty rewitalizacji – śródmieścia, blokowiska, tereny poprzemysłowe, pokolejowe i powojkowe, Cracow: IRM.

Jażewicz, I. (2007) „Społeczne stygmaty przestrzeni miejskiej małego miasta – przykład Ustki”, Percepcja współczesnej przestrzeni miejskiej, M. Madurowicz (ed.), Warsaw: University of Warsaw.

Jędraszko, A. (2005) Zagospodarowanie przestrzenne w Polsce — drogi i bezdroża regulacji ustawowych. Warsaw: Unia Metropolii Polskich.

Kulesza M. (2000) „Transformacja ustroju administracyjnego Polski”, *Sudia Iuridica* vol. XXXVIII/2000, Warsaw: University of Warsaw.

Local Data Bank (2013) www.stat.gov.pl

Markowski, T. (2006) „Marketing miasta”, Marketing terytorialny, T. Markowski (ed.), *Studia KPZK PAN*, t. CXII, Warsaw: KPZK PAN.

Marszał, T. & Kozłowski, S. (2009) „Spatial organization of small towns in Central Poland – the context of revitalization”, *Specyfika odnowy małych i średnich miast w Polsce*, Poczobut J. (ed.), Cracow: Stowarzyszenie Forum Rewitalizacji.

Ministry of Regional Development (2011) National Spatial Development Concept 2030

Munk, A. (2007) “Ten years of Integrated Urban Regeneration”, *KVARTERLØFT – 10 years of urban regeneration*, The Danish Ministry of Refugees, Immigration and Integration Affairs.

Pancewicz, Ł. (2009) „Pruszcz Gdański – studium przypadku realizacji zespołu nowego centrum wraz z przestrzeniami publicznymi w małym mieście, fragmencie aglomeracji trójmiejskiej”, *Współczesne kształtowanie przestrzeni publicznej województwa pomorskiego*, A. Goleđzinowska (ed.), Gdańsk: Urząd Marszałkowski Województwa Pomorskiego.

Rydz, E. & Jażewicz, I. (2005) *Współczesne procesy urbanizacji na przykładzie wybranych miast Pomorza Środkowego*, [w:] *Współczesne procesy urbanizacji i ich skutki*, I. Jażdżewska (ed.), Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

Tverskov, K (2007) “Image - a part of the kvarterloeft strategy”, *KVARTERLØFT – 10 years of urban regeneration*, Copenhagen: Ministry of Refugees, Immigration and Integration Affairs.

ⁱ The paper is based on the outcomes of the research project “Transformation of public space in medium sized town in conditions of market economy in Poland” financed by the National Science Center on the basis of the decision number DEC-2011/01/N/HS4/05989.

ⁱⁱ In some cases the town is depopulating, however the considering the suburban communes, the area in total is growing.

ⁱⁱⁱ The voivodeships (regions) are the key stakeholders in implementation of the EU regional policy.

^{iv} Joint European Support for Sustainable Investment In City Areas.

^v For the purpose of this research, "medium-sized towns" are understood as those with populations between 10,000 and 100,000, in accordance with the term as it is defined in the National Spatial

Development Plan of 2005. This rather broad term includes also, with regard to their functions, also smaller towns that are the capitals of powiat districts.

^{vi} Based on the Local Data Bank; before 1995 a different statistical method was applied.

^{vii} A huge role in promoting awareness in this area has contributed the publication of Jan Gehl's "Life between buildings: Using Public Space" – first edition in issued in 1971.

Planning tool for the transformation to low density cities in more sustainable urban models

Jimena GOMEZ PIOVANO; Alejandro MESA, INCIHUSA CONICET CCT- Mendoza, Mendoza Argentina

1. Introduction

South America is one of the regions where the phenomenon of urbanization has a big proportion overcoming Europe and USA. This phenomenon increases in Argentina considering that 70% of the population lives in cities (ONU Habitat 2012). Most of the developments are concentrated in fertile and productive areas, while there are large desert areas without occupation or exploitation. Therefore the accelerated urbanization processes constitute a loss of agricultural production. There is a great need to preserve natural soil in the environment and is more complex in arid land where the expansion is limited to a certain area.

Salvador Rueda (1998) sustains that there are currently two antagonist models of urbanism, compact city and urban sprawl. Urban sprawl is the one that is dissipated in large areas, that has everything and much but with low population density, with functionally separate areas: university, industry, residence, commercial areas, and offices. (Rueda, 1998). These functional cores bind through a dense network of roads and private transport. Hence, urban sprawl is characterized by the increase in urbanized areas, consuming excessive amounts of energy and other natural resources such as soil.

The combination of the dispersion of activities that the diffuse city imposes, and the need of man to be in touch personally give as a results in a massive use of motorized means of locomotion, mostly private vehicles. This is due to the low population density makes that public transport becomes economically inefficient and unprofitable (Rueda, 1998; Mesa, 2005; Papparelli, 2009). Thus the urban sprawl model is considered unsustainable because the urban land track cover and horizontal mobility network is expands invading high-value land both ecological and agricultural (Rueda, 1998; Papparelli, 2009).

In contrast, compact cities, the highest population density promotes greater diversity of uses, that is to say, the coincidence in the same sector of the residence, services, economic activities and equipment. In this way provides the proper context for increased exchanges of information (Rueda, S. 1998; de Schiller, S. 2000). The confluence of activities on the ground floors meets the necessary urban services and facilities to the people, thus increasing the number of trips on foot or by bike and reducing the need to use motor transport (de Schiller, S. 2000). In turn, the highest population density favors public transport which produces fewer cars on the road, thus freeing up mobility pathways saturated today by private transit. The densification, in relation to infrastructure, resulting in lower energy consumption, as well as feasibility of implementing them (Burgess, 2000; Rueda, S. 1998; de Schiller, S. 2000).

The benefits resulting from the reduction in the rate of urban expansion, through the promotion of higher density settlements are particularly important where the urban growth rate is high, the cultivated land per capita and growth rates agricultural production are low (Mathey, 2000).

An example of this problem occurs in Metropolitan Area of Mendoza (MAM). The City is inserted into an oasis irrigated by the Mendoza River, forming a "green island" in a large space semidesert. The conglomerate urbanized area has increased by 129% between 1986 and 2011, while population growth was only 41%. In this process invade soil areas with high agricultural potential and the piedmont-extremely fragile ecosystem, while in the central areas the population decreases. This phenomenon is the result of internal migration, associated with the inhabitants of the central districts moves their place of residence to the periphery looking to improve their quality of life. Thus, it accelerates the process of territorial fragmentation, increasing demand for services and equipment, and unbridled competition for land use. Without considering the energy costs associated with new developments and isolated dwellings models that it promotes.

This is a very common trend in Latin America and corresponds begin planning the population growth in already developed areas. Consequently, this paper develops a simple simulation tool to visualize urban growth

2. Methodology

This paper consists of a description and application of a calculation methodology that allows to evaluate the different levels of sustainability indicators associated with land use of urban growth in low density cities (<80 inhabitants/hectare). **The** second step aims to verify theoretical application in a case. To this end, the different variables of urban growth for the MAM are studied.

The simulation tool designed develops a digital projection system in order to estimate levels of urban scale sustainability of cities. The instrument designed is structured as a strategy of continuous improvement (Deming PDCA Cycle), consists of four stages, which are called: know, estimate, test and act. For each one of the stages will establish the specific procedures that make up the tool.

2.1. Know

This first step aims to understand the characteristics of the study area: the historical, geographical, morphological and social place. In this study we obtained the data needed to perform the numerical estimation, which are described below:

- Population Data
 - Total Population Year A
 - Total Population Year B
 - Number of years between A-B
- Urban Data
 - Urban area (m²)
 - Surface mitigating public spacesⁱ (m²)
 - Total floor area (m²)
 - Urban parcels surface (m²)
 - Area of undeveloped urban parcels (m²)
 - Surface circulation (m²)
 - Relationship between the built footprint and the surface of building land (F.O.S.)
 - Relationship between the floor area and the area of land (F.O.T.)

Where A= prior to the current period with data and B= current year

2.2. Estimate

In this second stage is performed the simulation for growth. For this, it is necessary to set the time period under study, it is denominated "year C", subsequently it projected population growth in the study area, based on population data recorded in the previous point.

- Estimation of population growth ⁽ⁱⁱ⁾

$$\text{Population C} = \left\{ \left[\left(\frac{\text{Population B}_{-1}}{\text{Population A}} \right) \cdot \text{Year A- C} \right] + 1 \right\} \cdot \text{Population A}$$

- Public spaces stipulated

$$\text{New public spaces} = (\text{Population C} - \text{Population B}) \cdot \left(\frac{\text{Mitigating public spaces}}{\text{Population B}} \right)$$

- New area built

$$\text{New area built} = (\text{Population C} - \text{Population B}) \cdot \left(\frac{\text{Area built}}{\text{Population B}} \right)$$

- Area of new urban parcels

$$\text{Area of new urban parcels} = \frac{\text{New area built}}{\left(\frac{\text{Area built}}{\text{Area urban parcels}} \right)}$$

- Area of new urban parcels without building

$$\text{Area of new urban parcels without building} = \text{Area of new urban parcels} \cdot \left(\frac{\text{Area of urban parcels without building}}{\text{Area of urban parcels}} \right)$$

- Area of new circulations

$$\text{New circulations area} =$$

$$\frac{\text{Circulation Area} \cdot (\text{New parcels area} + \text{Area of new urban parcels without building} + \text{New public space area})}{(\text{Parcels areas} + \text{Public space area})}$$

2.3. Test

In this instance, assesses sustainability levels of the estimated simulations during the time period studied. To this end, we compare the simulation results obtained in relation to the ideal values established by Salvador Rueda (s/f) as optimal, of the following urban indicators:

- Density Housing

$$\frac{\text{Estimated number of inhabitants}}{\text{Total urban area}} \rightarrow \text{Desirable value 220-350 inhabitant / ha}$$

- Absolute Compactness (Ca):

$$\frac{(\text{Area built} + \text{New area built}) \cdot 3}{\text{Total built-up area}} \rightarrow \text{Desirable value 5}$$

- Corrected Compactness (Cc):

$$\frac{(\text{Area built} + \text{New area built}) * 3}{\text{Public space area} + \text{New public space}} \rightarrow \text{Desirable value 10 a 50 m}$$

- Public space mitigating (EPA):

$$\frac{(\text{Public space area} + \text{New public space})}{\text{Estimated number of inhabitants}} \rightarrow \text{Desirable value } 10\text{m}^2/\text{inhabitant}$$

2.4. Act

At this stage the results are evaluated in the previous point. If the values found far from the reference values shall be proposed generating growth options and the cycle begins again.

3. Development

3.1. CASE A: Estimation of growth of the Metropolitan Area of Mendoza in a period of 30 years according to current growth parameters.

3.1.1. Know

The AMM consists of six political-administrative regions City of Mendoza, Godoy Cruz, Guaymallén, Las Heras, Luján y Maipú. The urban area that comprise have approximately 18,000 ha, inserted into the oasis watered by the Rio Mendoza of 158,000 ha. Historically, the formation of the AMM was developed as an extension of the urban area of the City of Mendoza to the neighboring departments. In a first stage, the growth was around the foundation area, but from an earthquake happened in 1861 built a new town on land adjoining. The continued growth of the urban area was including small urban centers, independent in its formation, as the departmental centers. This development process that began in the late nineteenth century and is maintained to the present, resulting in extensive low density urban area, which invades the neighboring agricultural areas of high ecological value, and piedmont areas (at west), extremely fragile ecosystem (Figure 1).



Figure 1: Growth of MAM. Mosaics built on cadastral base

In recent years, the AMM has increased the urban area with an annual rate of 4.5%. Between 1983 and 2011 the area grew by 129%. For example, from 2003 to 2011, the urban spot went from having an area of 14,026 ha to 17,732 ha. However, this model of rapid increase of the urbanized area contrasts with the population increase which has a slower pace (Figure 2).

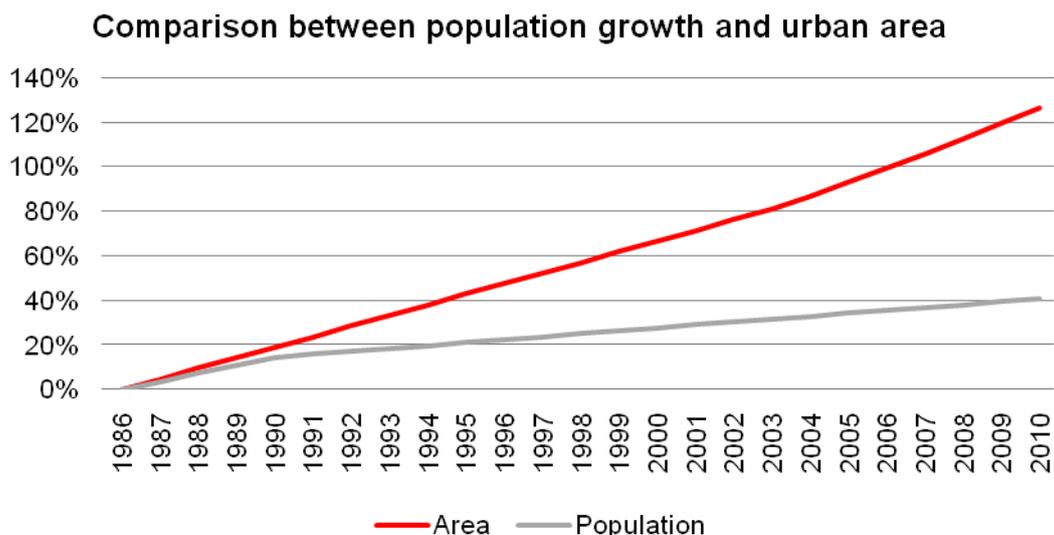


Figure 2: Comparison between population growth and urban area

On the one hand, this is because new projects are of lower density than the consolidated areas. While on the other hand there is an intra-urban migration process where the families living in the center leave their former homes and move their residences to new areas on the periphery. Thus, when comparing the 1991 census data and 2001 in 46% of consolidated urban areas there were declines in the number of inhabitants, while in the periphery increased the population (Figure 3).

Today the MMA is the fourth largest city in Argentina with a population of 1,086,633 inhabitants and an urban area of about 18,000 ha. It is formed by 60% of urban parcels, 36% of circulations and 4% of public recreational spaces (squares, parks and pedestrian) (Figure 3). The relationship built between the tread surface and ground (FOS) of MMA is 0.37, with variations depending on the department. The one with greatest levels is the City department who reaches a 0.5, while the lower value 0.17 corresponds to Lujan. The relationship between the floor area and the area of land (FOT) on average is 0.66, taking the most range in City department and lowest in Maipú department (Figure 2).

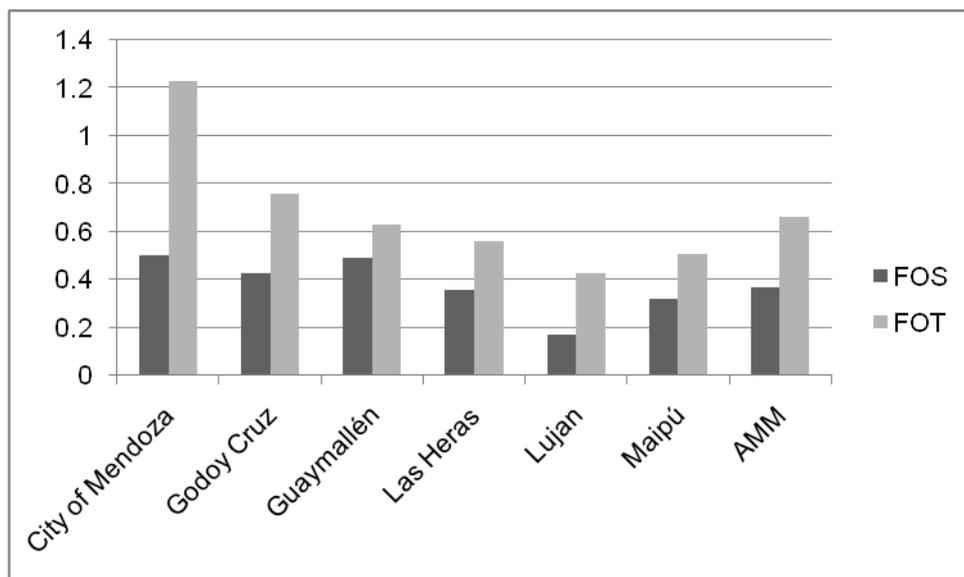


Figure 3: Urban indicators FOS FOT by department

On the other hand, within the consolidated urban area are available 30,608,775 m² of parcels unoccupied, representing 24% of the area devoted to such use (Figure 4). The relationship between floor area and number of inhabitants is 39.35m²/hab.

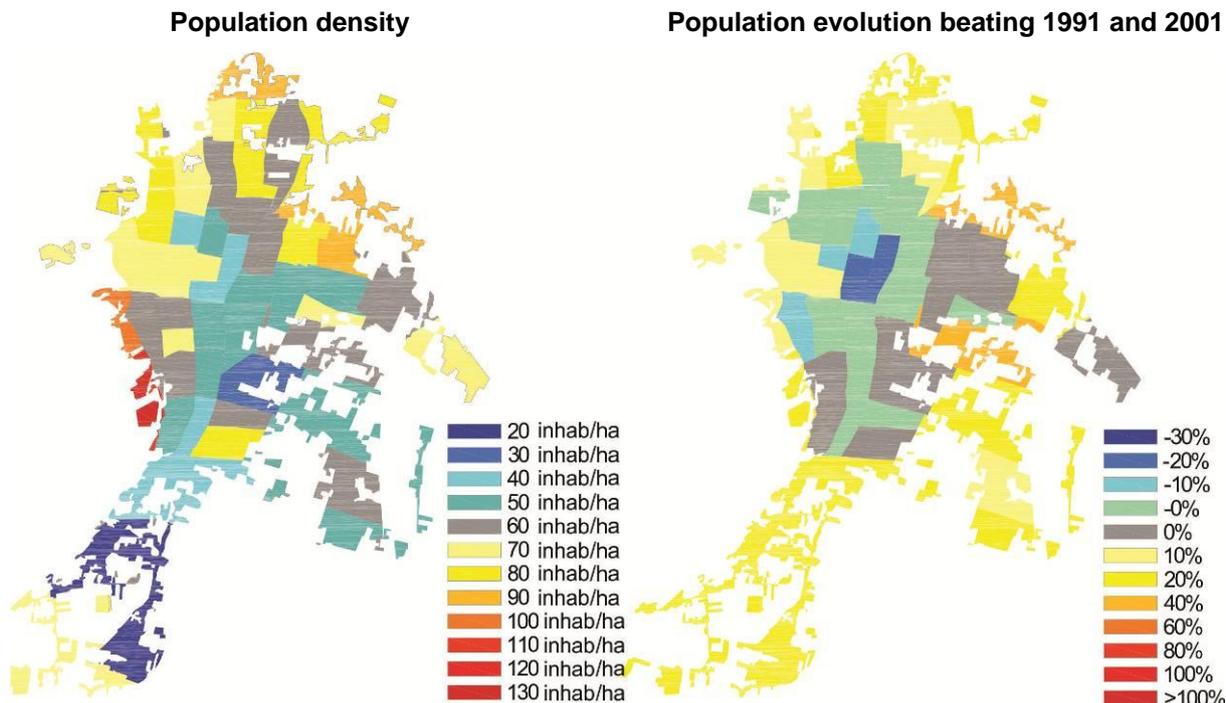


Figure 4: Population density and Population evolution

The AMM has 8,097,088 m² of public spaces attenuating, which correspond to 7.45 m²/inhab. The distribution of the same in the territory is uneven: in the district of City lies the most (50.15m²/inhab.), While the Department of Las Heras is the one that has fewer (0.62 m²/inhab.) (Figure 5).

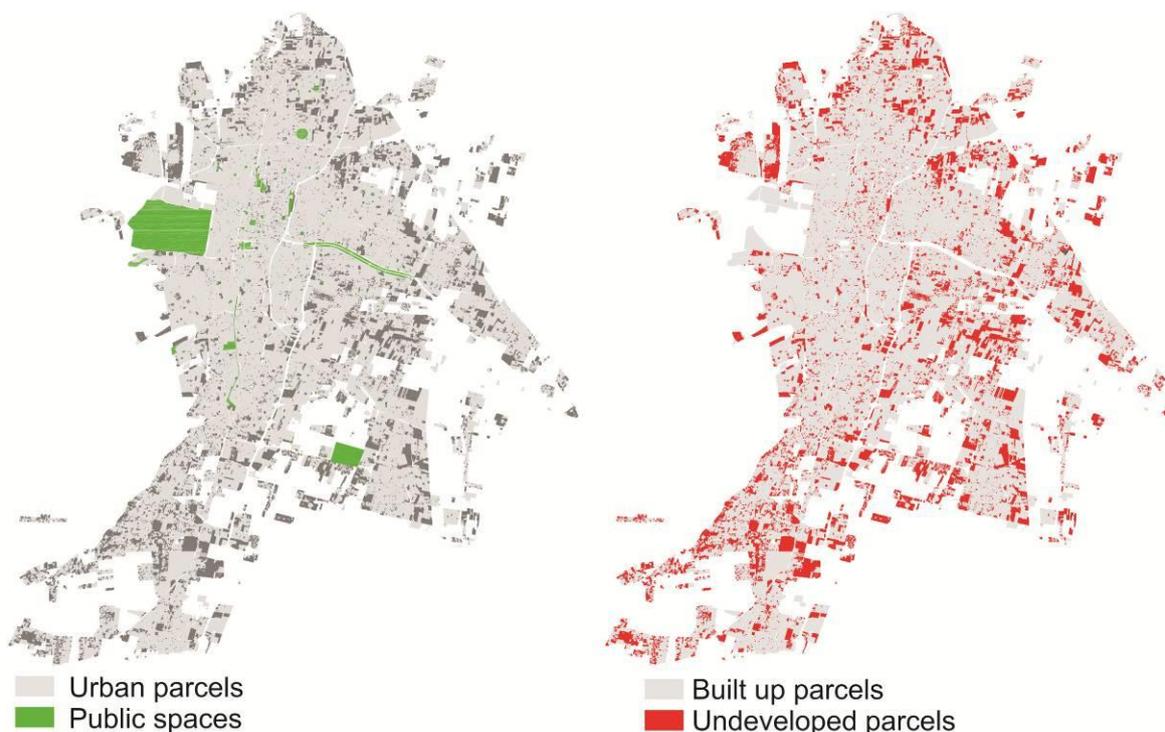


Figure 5: Composition of the urbanized surface of the Metropolitan Area of Mendoza.

3.2. Estimate:

The growth simulation raised here covers the period of 30 years, 2,013ⁱⁱⁱ and 2,043^{iv}. Following the current growth trend, by the year 2043 the number of inhabitants of the AMM would amount to 1,407,567 inhabitants, which would mean an increase of 320 934 people (28%), accompanied by an expansion of the urban area of 7,318 ha, composed as follows:

Siguiendo las tendencia actuales de crecimiento, para el año 2.043 la cantidad de habitantes del AMM ascendería a 1.407.567 habitantes, lo que significaría un aumento de 320.934 personas (28%), acompañado por una expansión de la mancha urbana de 7.318 ha, compuesta de la siguiente manera:

- New public spaces: 2,391,455.15 m²
- New built-up areas: 12,630,639.77 m²
- New surface plots: 37,259,064.31 m²
- New areas of undeveloped parcels: 9,040,226.87 m²
- New surface circulation: 26,851,075.91 m²

3.2.1. Test:

In this third stage, we will evaluate the levels of sustainability of the urban to 2,043.

- Density Residential: 49 inhab. / Ha →desirable value 220-350 inhabitant / ha
- Compactness Absolute (Ca) 0.59 →desirable value 5 m
- Corrected Compactness (Cc): 15.84 →desirable value 10-50 m
- Public space mitigation (EPA) = 7.37 → desirable value 10 m²/habitante

3.2.2. Act

The values of sustainability indicators, evaluated in the previous section, not found within the optimum parameters, so that there is proposed a new growth strategy. This new project aims to meet the demand of building area, on the current consolidated structure, completing the current undeveloped parcels.

3.3. CASE B: Estimation of growth of the Metropolitan Area of Mendoza in a period of 30 years without increasing urbanization surface.

3.3.1. Know:

As in the previous simulation, at this stage is performed a growth forecast for a time period 30, which will compare the results of the two proposals. Consequently, population growth would be identical to the previous inhabitants 320,934.40, but contrary to the previous model this will not increase the urbanized area.

3.3.2. Stimate:

Posed simulation corresponds to the period between 2,013 and 2,043. According to the statistical estimation of the urban population would 1,407,567.40 inhabitants. This population increase would not be accompanied by the expansion of the urban area, but for the use of parcels without buildings, the available surface is 30,608,775 m². It involves the construction of:

- New public spaces: 2,391,455.15 m²
- New built-up areas: 12,630,639.77 m²

Here we see that the current urban area can host for 30 years the growth population following the current urban construction rates and including mitigating public spaces, all of this using only 80% of vacant land. For this reason, we conclude that the developed area of the AMM can be maintained without increases for more than 30 years.

3.3.3. Test:

As in the previous case, in this stage are evaluated sustainable levels of new urban structure.

- Density Residential: 67 inhab. / Ha → desirable value 220-350 inhabitant / ha
- Compactness Absolute (Ca): 0.80 → desirable value 5 m
- Corrected Compactness (Cc): 15.84 = → desirable value 10-50 m
- Public space mitigation (EPA) = 7.37 → desirable value 10 m²/habitante

3.3.4. Act:

The values of urban indicators of this proposal have better performance than the previous simulation, but are far from the desired parameters. For this reason, we propose a new strategy for growth. This new project proposes, as above, limit growth to the current area. It also proposes to work with the population level necessary for stocking density is within the ideal values involving sustainable development. This new calculation implies the renewal of the building industry.

3.4. CASE C: Estimated population growth necessary to reach desirable urban density values posed by Rueda.

3.4.1. Know

To carry out this simulation proceeded to calculate the necessary population to urban sprawl current density reached 220 inhabitants / ha. The calculation indicates that this requires 4,596,853 people. Following the statistical estimations this level of population would be reached in 360 years.

3.4.2. Estimate

Referred simulation corresponds to the period between 2,013 and 2,373. According to the statistical estimation of population growth will be 3.51022 million people, reaching the 4,596,853 inhabitants. It involves the construction of:

- New public spaces: 26,156,540.65 m²
- New built-up areas: 138,147,622.54 m²

The parcels surface unbuilt, today, is 30,608,775 m², that to leading to the 85% of them would be destined to public spaces. While newly built surfaces correspond to the renewal of current buildings.

3.4.3. Test:

As in the previous case, at this stage assess sustainability levels the urban sprawl of 2043.

- Density Residential: 220 inhab. / Ha → desirable value 220-350 inhabitant / ha
- Compactness Absolute (Ca): 2.61 → desirable value 5 m
- Corrected Compactness (Cc): 15.84 = → desirable value 10-50 m
- Mitigation Public Space (EPA) = 7.37 → desirable value 10 m²/habitante

3.4.4. Act

Two of urban indicators evaluated in this proposal are within parameters of sustainability, while the amount of public space is slightly smaller than that established. Consequently, future simulations should increase public spaces surfaces.

This is a theoretical exercise, since we do not know what can happen in 360 years.

4. Conclusion

The work done, on the one hand, presents a simple simulation tool for the visualization of the evolution patterns associated with urban growth of cities, and also assess the levels of sustainability of land use. Studies denote that for the urban area reached sustainable levels established for other regions, it should quadruple its population.

On the other hand, analyzes the current characteristics of AMM and its future projection, showing that the current low density urban model is far from the standards of sustainable development. Therefore, urban planning must develop strategies that reverse sprawl.

In short, the introduction of simulation tools in urban planning allows to evaluate the current models, and redirect unsustainable growth processes in more sustainable models.

References:

- Bunge, V. (2010).** La capacidad de carga en la planeación territorial: una propuesta para su análisis [versión electrónica]. *Documento de Trabajo de la Dirección General de Ordenamiento Ecológico y Conservación de Ecosistemas, Instituto Nacional de Ecología, México*. Recuperado el 3 de diciembre de 2011 en: http://www.ine.gob.mx/descargas/ord_ecol/2010_doc_trabajo_capacidad_carga.pdf
- Burgees, Rod. (2000)** The Compact Cities Debate: A Global perspective. *Compact Cities. Sustainable Urban Forms for Developing Countries*, London: Spon Press
- de Schiller, S., Bentley, I. & Butina Watson, G. (2000).** Sustainable urban form: environment and climate responsive design. En Zetter, R. & Butina Watson, G *Sustainable cities, sustainable development: the urban agenda in developing countries*. Oxford: Oxford Brookes University.
- Mathey, K. (2000)** Urban Agriculture Trialog 65: *A Journal for Planning and Building in the Third World* Special Issue, Vol. 2, pp3-43,
- Mesa, Alejandro. y de Rosa, Carlos. (2005)** Estudio de los Patrones de Apropiación del Suelo Urbano por la Expansión de las Áreas Residenciales. Análisis del Área Metropolitana de Mendoza. Salta: AVERMA.

ONU-Habitad (2012) Programa de las Naciones Unidas para los Asentamientos Humanos.
Recife: ONU-Habitad

Papparelli A., Kurbán A. y Cúnsulo M. (2009) *Planificación sustentable del espacio urbano*. San Juan: Nobuko

Rueda S. (1998). *Modelos e indicadores para ciudades más sostenibles*. Catalunya: Ed. Agencia Europea de Medio Ambiente Generalitat de Catalunya.

ⁱ Mitigating public spaces: are all public spaces not destined for circulation, but rather to stay at the meeting and recreation of the inhabitants, such as parks, plazas, parks, footpaths, etc. (Rueda, s/f)

ⁱⁱ The estimated population growth is geometric

ⁱⁱⁱ Año B

^{iv} Año C

Old neighborhoods showcasing new urbanism principles to promote walking for transport

Paula Grant MPIA CPP, Senior Lecturer (Urban and Regional Planning), University of Southern Queensland

Abstract

The built environment shapes our transport choices and has a significant impact on the environmental, economic and social wellness of communities. Compact land use patterns, as opposed to urban sprawl, can improve public health by providing the environment to make walking a feasible mode of transport. Toowoomba's traditional inner city suburbs have the built form characteristics of compactness, connectivity, density, lot layout and mix of uses to be walkable. Using existing literature, geographic information systems, data, survey results and a walkability scoring tool, this paper will show that although being walkable and exhibiting New Urbanism characteristics very few people walk to work in Toowoomba's urban centre for a variety of reasons. This paper will argue that personal value propositions and attitudes are as influential for walking for transport as physical urban environments.

Keywords

Walkability, new urbanism, public health, built environment, psycho-social barriers

1 Background

New Urbanism advocates claim that this urban design theory can reduce both travel distance and time, increase the use of public transport and reduce dependence on the private vehicle (Cozens and Hillier, 2008). Much of the literature debates the benefits of a grid pattern over a cul-de-sac neighborhood layout (And and Ahn, 2003). Many contend that very few newly built New Urbanism environments have been critically or systematically evaluated to prove or disprove the claims of improved walkability and that they suffer generally from methodological problems. (Randall and Baetz, 2001). Much of the debate is driven by an aversion to what is perceived as a one size fits all codified stance by new urbanism based on a grid pattern as opposed to a cul-de-sac pattern or any acknowledgement that there is no one kind of planning that will promote walkability (Cozens and Hillier, 2008).

Given that very few actual levels of pedestrian activity were studied in the literature to ascertain if urban design factors such as grid or cul-de-sac connectivity necessarily result in increased levels of walking, I have looked to an existing older neighborhood that I contend displays the characteristics of a connected and walkable design to determine if levels of walking to work attain a high percentage of mode share. In valuing what already exists and putting aside the new urbanism debate surrounding grid layouts, the real message for planners may be to look beyond the natural environment attributes and focus on the psycho-social correlates of walkability as policy makers.

New Urbanists, following the congress of New Urbanism in 1998, generally subscribe to a set of core principles and code provisions including:

- compact, walkable neighborhoods with clearly defined edges;
- a clearly defined centre with public space, public buildings , a transit stop, and retail businesses;

- an interconnected street network, forming coherent blocks and lined with building fronts rather than parking lots;
- a diverse mix of activities and housing options;
- civic spaces in prominent places; and
- open spaces in convenient locations throughout neighborhoods (Lund, 2003).

2 Purpose

The purpose of this paper is to establish that the inner city areas of East Toowoomba are highly walkable and then to identify what share walking has of available modes of journeys to work. The paper will explore a multi-disciplinary approach to increasing the mode share of walking for journeys to work by identifying the various correlates of walkability identified in existing literature and placing new emphasis on the psycho-social correlates of various modes. The fundamental question this paper asks is if old, existing neighborhoods that are displaying all of the characteristics espoused by new urbanists are not experiencing higher levels of people walking to work what are the correlates that as planners and policy makers we can identify, understand and influence? The paper will discuss an existing theory of the correlates of walkability proposed by Saelens et al (2003) and then contribute to that theory by developing it further by attributing equal importance to other psycho-social correlates for walking for transport. In order to understand why people are not walking in highly walkable environments the paper will also suggest a number of paradigm shifts required for transport policy planners that take into account the psycho-social factors that influence travel behaviours.

3 Method

This paper is a desk top study based on existing literature, geographic information systems, census, survey results and a walkability scoring tool.

There exists a large volume of literature about walkability from a variety of disciplines and some literature that provides a cross-disciplinary approach. Systematic reviews (Giles-Corti et al., 2013, Cervero and Kockelman, 1997, Duncan et al., 2010, Frank et al., 2003) have concluded that built environment attributes, especially land use patterns, are consistently related to physical activity in general and to walking for transport in particular. Different factors impacting on walking for transport, including proximity, connectivity, land use mix and infrastructure have been identified (Duncan et al., 2010, Frank et al., 2006a, Frank et al., 2006b). Reviews of the public health and preventative medicine literature indicate that access to recreation settings and the aesthetics of activity settings are related to walking. Reviews of the transport and urban planning literature indicate that ease of pedestrian access to nearby destinations is related to walking (Saelens et al., 2003).

The census and the Toowoomba household travel survey conducted by the Department of Transport and Main Roads in 2012 are the primary data sources for the paper. The survey collected comprehensive travel behavior information from a sample of 2000 households in private dwellings. The data contains both quantitative and qualitative responses. Survey results are representative of personal travel by Toowoomba residents on a typical school term weekday. Results are based on sample data benchmarked to the 2011 census data results about number of private dwellings and estimated resident population living in dwellings by age and gender (ABS, 2012).

The walkability audit tool used for the paper is Walk Score. Walk score is a freely available product that was founded by a private company in 2007. The stated mission of the company is to promote walkable neighborhoods with the idea that this is one of the simplest and best solutions for the environment, our health and our economy. According to the walk score webpage, the walk score algorithm awards points based on the distance to the closest amenity in each category. If the closest amenity in a category is within 400 metres it assigns the maximum number of points. The number of points declines as the distance approaches 1.6 km—no points are awarded for amenities further than 1.6 kilometres. Each category is weighted equally and the points are summed and normalized to yield a score from 0–100. The number of nearby amenities is the leading predictor of whether people walk. Relevant amenities include "businesses, parks, theaters, schools and other common destinations (Score, 2013). Walk score does not take into account pedestrian infrastructure, road type, weather nor criminal activity statistics. Carr, Dunsiger and Marcus (2010) have validated the use of walk score as a reliable measure of access to walkable amenities and identify that it is a convenient and inexpensive option for research into the correlated between walkability and physical activity.

4 Results

4.1 Walkable neighborhoods – Toowoomba inner city suburbs

Using the walk score tool the area of Toowoomba Central (3 464 people), East Toowoomba (7 154 people) and South Toowoomba (6 826 people) score 82, 68 and 62 respectively. These three areas represent the older, traditional and first settled areas of Toowoomba. Toowoomba as a city (96,567 people) has an overall walk score of only 46, illustrating that ironically the older neighborhoods of Toowoomba are exhibiting more walkable urban design characteristics than the new. The most walkable cities in Queensland according to walk score are Brisbane, Gold Coast and Toowoomba. The least walkable cities are Bargara, Hervey Bay and Warwick (Score, 2013).

Figure 1 shows the score as a colour ranging from green for a hundred to red for a zero walk score.

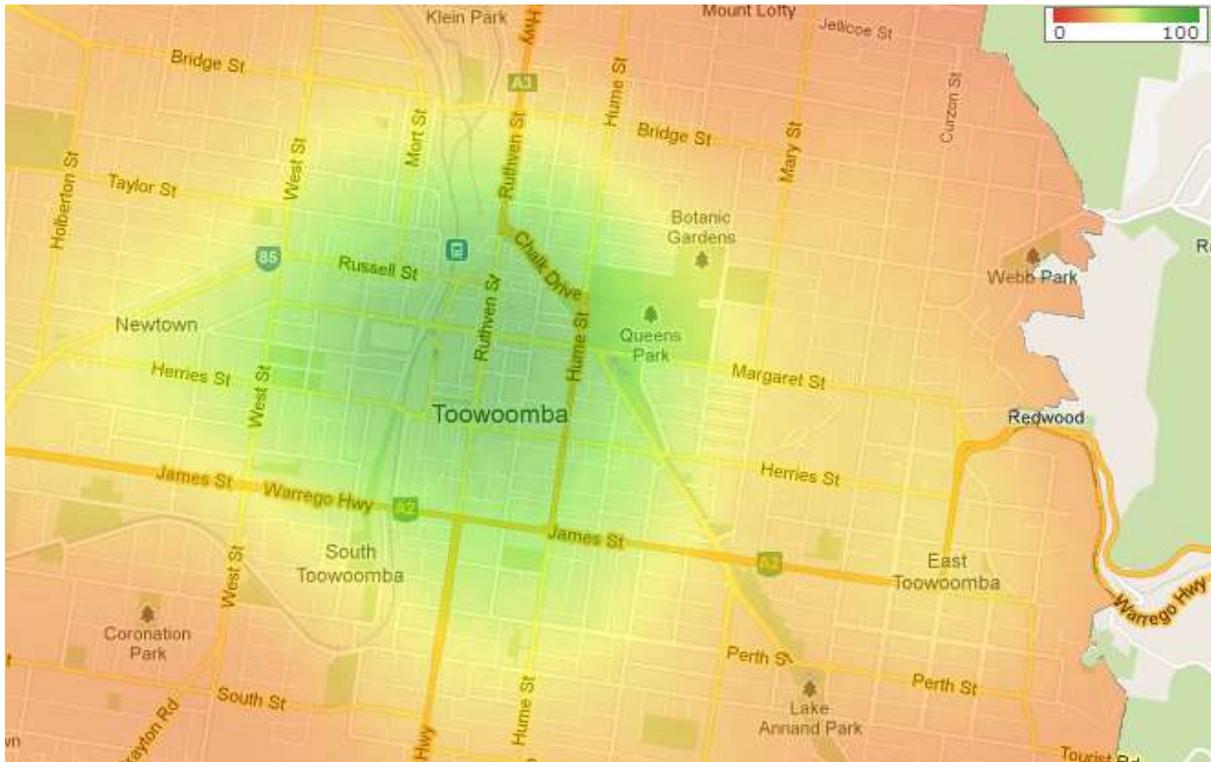


Figure 1: Toowoomba City, South Toowoomba and East Toowoomba walk score retrieved from http://www.walkscore.com/AU-QLD/Toowoomba/Toowoomba_City 7 May 2013

Further analysis of the inner city suburbs by evaluating how they perform against the new urbanism design principles contained in the Next Generation Planning Handbook also reveal a high correlation between these traditional, older suburbs and new urbanism criteria (Queensland, 2011)

New Urbanism Principle

compact, walkable neighbourhoods with clearly defined edges

Evaluation by Next Generation Planning Handbook

Compact urban form

Edges formed by East and West Creek, James Street and the Great Dividing Range



a clearly defined centre with public space, public buildings, a transit stop, and retail businesses

Toowoomba city centre clearly defined with civic buildings, transit stops and retail

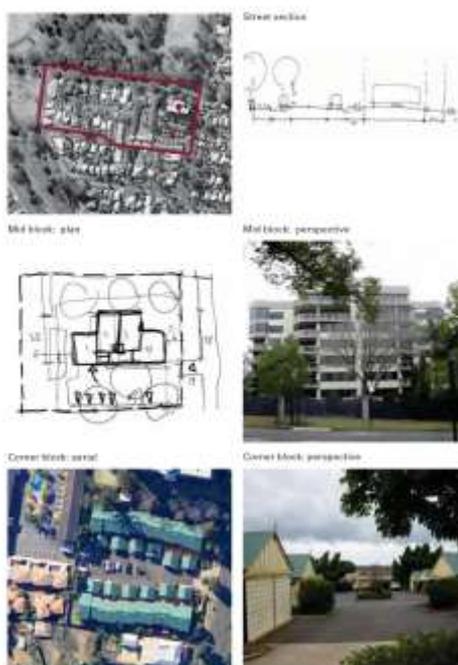
an interconnected street network, forming coherent blocks and lined with building fronts rather than parking lots

Grid street network with rear lanes in Caledonian Estate



a diverse mix of activities and housing options

Diversity of housing and land use mix



civic spaces in prominent places

Queens Park and East Creek Mothers Memorial

open spaces in convenient locations throughout neighbourhoods

Queens park, East and West Creeks

Figure 2: New urbanism evaluation of Toowoomba (Queensland, 2011)

4.2 Who is walking to work in these highly walkable neighborhoods?

Only five percent of the population walks to work in Toowoomba's inner city neighborhoods and an overwhelming 95% rely on a private vehicle for their journey to work. Toowoomba does have a high proportion of medium distance trips (two – five kilometres) in comparison to other regional centres in Queensland due to its compact built form. Approximately 17% of all commuter journeys to work are short, less than two kilometres and end relatively close to home. Of all journeys to work fifty-eight percent are less than five kilometres (QTMR, 2012).

Analysis undertaken for Setting the Transport Scene in the Darling Downs indicates that around 36% of residents live within one and a half kilometres of a commercial activity centre and/or major employment hubs.

Toowoomba urban area consists mainly of a grid street layout making connectivity and permeability high for walking. The pathways within creek networks do provide linear networks in a park setting for walking within the urban area. One in three commuters travel less than four kilometres to work in the Toowoomba urban area. These figures would indicate that at least some of these journeys could possibly be converted to walking if we started to understand and address the reasons for private vehicle use more comprehensively and started to compete in that space for mode share.

The estimated average time spent travelling in a return trip by car Toowoomba residents each day is fifty-two minutes. For those walking trips recorded in the 2012 Toowoomba household travel survey the average distance recorded was one kilometre and the duration was fifteen minutes (QTMR, 2012).

In 2012 Toowoomba Regional Council area had 536 kilometres of existing pathways. 149 kilometers of these have been constructed over the last ten years, with 85% of all pathways located in the Toowoomba urban area.

A Toowoomba regional transport user analysis survey on attitudes towards travel modes conducted in 2010 found that four percent of all respondents said walking was not available in their local area and fifty percent did not consider walking as an option for journeys to work. Of the fifty percent, barriers or reasons for not walking included 45% said too far, 25% not comfortable, 23% said not fit enough and 16% no paths. Respondents were given thirteen possible associations with various transport modes including environmentally friendly, cheap, value for money, enjoyable, flexible, comfortable, easy, popular unreliable, stressful, unappealing and quick and were asked to nominate five of those in no particular order for each mode of transport.

Respondents cited the following top five associations with walking:

Top associations with walking	Association	% of respondents who nominated this particular association
1	Environmentally friendly	82%
2	Cheap	76%
3	Value for money	58%
4	Enjoyable	50%
5	Flexible	45%

Figure 3: Top five associations with walking

While most of the respondents identified very positively with the idea of walking and showed a clear understanding of the environmental and financial benefits of it, fewer viewed enjoyment, flexibility and value for money as positive associations. These lower scoring positive associations for enjoyment of walking are linked to the barriers identified for walking being the “journey is too far, walking is not comfortable, I am not fit enough and no paths have been provided”. The lowest scoring positive association relates to flexibility and can be linked to the value attached to the freedom and choice associated with the private car. The value placed on these positive association with the car are key to identifying as planners and policy makers what else needs to be done to promote healthy places and compete with perceptions and psycho social correlates of physical activity.

Respondents cited the following top five associations with the private vehicle:

Top associations with the private vehicle	Association	% of respondents who nominated this particular association
---	-------------	--

1	Comfortable	89%
2	Flexible	80%
3	Easy	78%
4	Popular	77%
5	Quick	76%

Figure 4: Top five associations with the private vehicle

The barriers identified by respondents to using a private vehicle include “congestion, impact on the environment, I don’t have a license and parking is too expensive”. These barriers are also critical clues for policy makers who have the political will to compete with the car and reclaim streets for people. Trends indicate that congestion will get worse not better and that the flexibility offered by the car will also decrease correspondingly with people spending longer and longer in the car due to congestion. All of the top associations cited by respondents for private vehicles are placed under serious threat if congestion increases including quickness and ultimately popularity.

5 Discussion

Planners have and do traditionally follow a number of key design principles that they believe by their application will promote walkability and create a healthy community. The principles include active transport, aesthetics, connectivity, environments for all people, mixed density, mixed land use, parks and open space, safety and surveillance, social inclusion and supporting infrastructure (ALGA et al., 2009). Extensive research exists to suggest that physical activity including walking is influenced by environmental variables and neighborhood context (Lund, 2003; Ross, 2000) (Saelens et al., 2003). Land use mix, density, connectivity and streetscape design are well documented built environment factors that can influence active transport to a degree in preference to private vehicle use.

The physical environment barriers to walking have traditionally been related to gaps in pedestrian infrastructure including partial or non-existent walking paths, poor quality walking surfaces, non-existent or inappropriate crossing treatments, speeding traffic, high speed traffic and high volume heavy vehicle traffic. The evidence demonstrates that there is an inherent contradiction in traditional responses to walkability and that even when the built environment is conducive in terms of compactness, proximity, connectivity, density, lot layouts and use mix there are other factors that are barriers to walking for transport in Toowoomba. Personal, social and perceptual barriers include people’s attitude to walking and these attitudes may be influenced by climate, topography, convenience, comfort, doubt about ability to walk, safety and status and are what we need to know more about in walkable environments where people are not walking.

The theory developed by Saelens, Sallis and Frank considers neighborhood environment factors, individual factors and walking and cycling purpose. The model, “*proposes next possible steps in the evaluation of environmental and psycho-social variables involved with physical activity and their interaction. For instance it is possible that the collective psycho-social factors of social support, self-efficacy and positive beliefs about physical activity are more closely related to the behavior in the presence of a more walkable physical environment.*” (B.Saelens, Sallis & Frank, 2003)

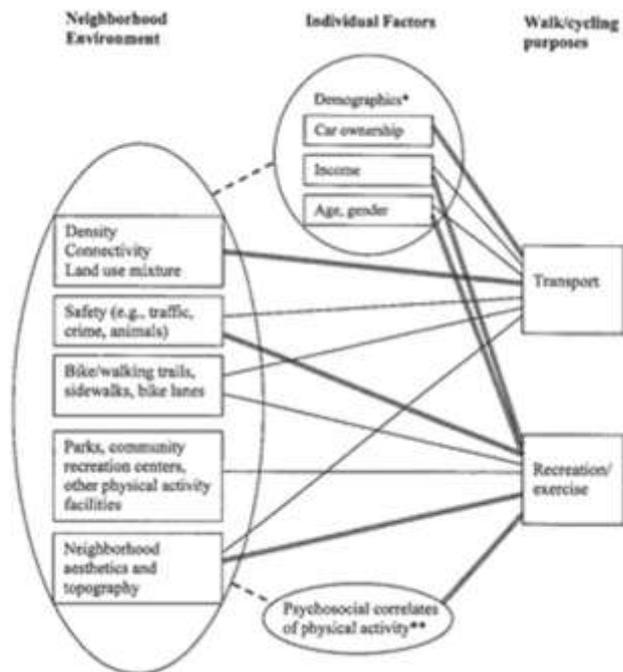


Figure 5: Saelens, Sallis and Frank Model (Saelens et al., 2003)

The model also attributes differing levels of importance to various environmental and individual factors depending on the purpose of the walking. The model attributes most important correlates for walking for transport to density, connectivity, land use mix and car ownership. The model does not attribute any importance to the psychosocial correlates for walking for transport. It does however show a dashed line between the psycho-social and neighborhood environment as a mediated relationship.

From the evidence presented not enough is understood about why people don't walk to and from work when the journey is walkable. As planners and policy makers we can influence, facilitate and provide the environment both physically and socially to overcome some real and perceived barriers to walking and contribute to the health and well-being of communities. The role of the planner can impact on the design and redevelopment of spaces and advocate for a greater priority on pedestrian infrastructure to influence changes in behaviour to create healthier places. The evidence in this paper suggests that it is not enough to create an environment for walking without understanding what motivates people to prefer the private vehicle when all of these design principles are in place. The less researched influences that this paper attributes equal significance are personal value positions, and attitudes to walking. These psychosocial attributes include variables such as self-efficacy, value attached to private vehicle, perceived benefits, perceived barriers, social support and a lack of enjoyment of physical activity (Saelens et al., 2003).

There is a lot of mixed thinking in the data collected to suggest that while people think walking to work is a good thing there a number of reasons that they won't or don't do it. In addition to the built environment incentives already understood, planners and policy decision makers need to have a much better understanding of the actual value people place on the perceived freedom and choice a private vehicle gives in order to propose a viable alternative that competes with this deeply held attachment (Litman, 2006).

Figure 6 proposes the psycho-social considerations of walking for transport that should be weighted as importantly as the environment and individual factors by urban planners working within multi-disciplinary teams of public health, transport, urban design and infrastructure providers

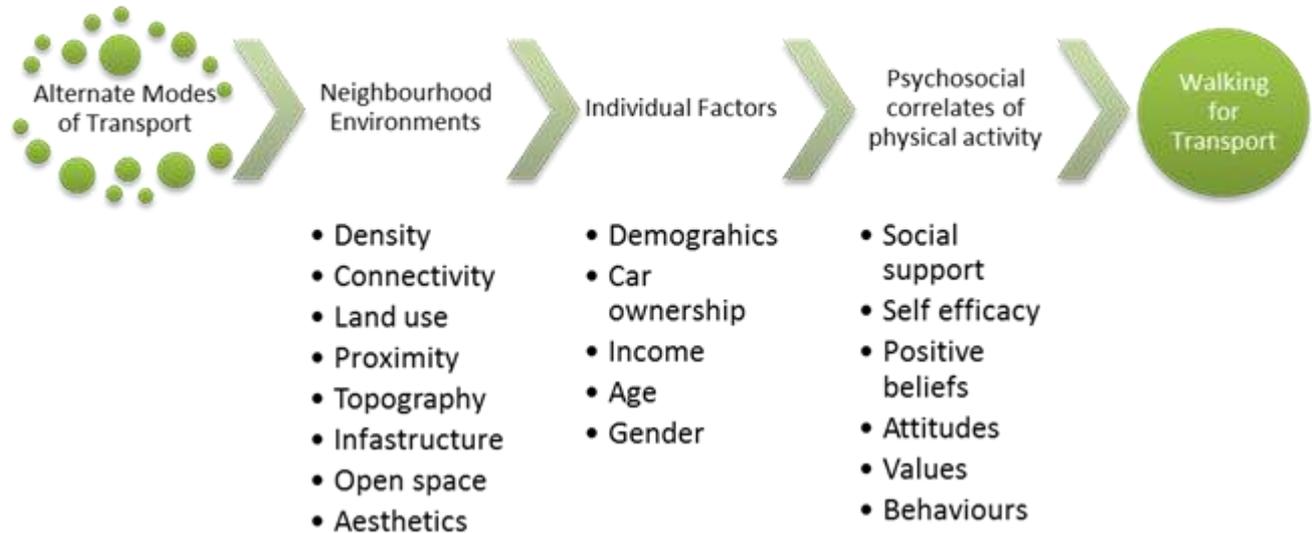


Figure 6: Correlates for walking for transport

Education won't necessarily change behavior as noted by Newhouse (1990) however planning frameworks and governance models can provide incentives and disincentives for vehicle use and walking. Making it harder for people to take cars to work and making it easier for people to choose to walk is within the sphere of influence for planning. Critically Newhouse identifies attitude as one of the most important influences on behavior, amongst others including locus of control, sense of responsibility and knowledge. In this case attitude can be defined as an enduring positive or negative feeling about private vehicles and walking. Beliefs based on information also come into play as either factual or personal opinion about different modes of transport. (Newhouse, 1990, De Vos et al., 2012, Elias and Shiftan, 2012)

According to Litman (2006) motor vehicle travel has started to peak in most developed countries because of demographic and economic trends of aging population, rising fuel prices, travel speeds, increased urbanisation, improved travel options, increased health and environmental concerns and changes in consumer preferences. For many their own car is not just a way to get around it is a symbol of success and freedom. For these reasons people buy more expensive cars, drive more and avoid using alternatives. McGucking and Lynott (2010) provide evidence using travel data and consumer surveys that there are significant attitudinal differences between older and younger generations. Hymas (2011) believes those born after 1980 aspire more to the urban lifestyles and are more interested in electronic devices than cars. The stigma once associated with walking, cycling or catching a bus has lessened as urban living becomes more popular.

Changing demands will require new transport policy and planning responses. A paradigm shift is required to move from the old paradigm of motor vehicle dominance to a new paradigm of multi-modal travel.

	Old paradigm	New paradigm
Transport	Mobility	Accessibility
Transport planning goals	Travel speed	Accessibility
Transport measurement	Levels of service, road type, traffic speed, congestion delay	Level of service, multi-modal, time and money required to access services
Transport affordability	Minimise vehicle costs (fuel, parking)	Minimise total transport cost, Supports affordable modes and affordable accessible housing
Analysis	Quantitative e.g. speed	Qualitative e.g. convenience and comfort
Modes	Car	Walking, cycling, public transport
Solutions	Roadway expansion	Transport demand management
Land Use	Sprawl	Smart growth
Funding	Dedicated funds for roads and parking facilities	Least cost planning allocates funds to the most cost effective and beneficial option

Figure 7 : Paradigm shift for multi-modal travel (Litman, 2006)

This shift in thinking will require all of the elements shown in figure 6 to be considered equally and from the various perspectives of urban planners, designers, engineers and public health specialists.

6 Conclusions

The value placed on older, traditional neighbourhoods in close proximity to high quality urban spaces with a mix of residential, commercial and retail uses is widely recognized. New urbanism is in part about getting back to the village or the older design ideas about land use mix, permeable lot layouts and housing diversity on which the community and market places significant value. This paper has identified that despite displaying new urbanism characteristics and being walkable fewer people than expected living in these areas in Toowoomba's inner suburbs are walking for transport. Further research is required to identify attitudinal and behavioral reasons why people are not walking for transport in these highly walkable environments. Linking these results to transport, public health and urban planning policies and programmes to increase mode share is as important as reviewing the neighbourhood's physical elements or individual demographic profiles.

References:

- ABS 2012. 2011 Census of Population and Housing.
- ALGA, FOUNDATION, N. H. & PIA 2009. Healthy Space and Places. *In: AGEING, A. G. D. O. H. A. (ed.). Kingston ACT: Planning Institute of Australia*
- AND, C.-M. L. & AHN, K.-H. 2003. Is Kentlands Better than Radburn?: The American Garden City and New Urbanist Paradigms. *Journal of the American Planning Association*, 69, 50-71.
- CARR, L. J., DUNSIGER, S. I. & MARCUS, B. H. 2010. Validation of Walk Score for estimating access to walkable amenities. *British Journal of Sports Medicine*.
- CERVERO, R. & KOCKELMAN, K. 1997. Travel demand and the 3Ds: Density, diversity, and design. *Transportation Research Part D: Transport and Environment*, 2, 199-219.
- COZENS, P. & HILLIER, D. 2008. The Shape of Things to Come: New Urbanism, the Grid and the Cul-De-Sac. *International Planning Studies*, 13, 51-73.
- DUNCAN, M., WINKLER, E., SUGIYAMA, T., CERIN, E., DUTOIT, L., LESLIE, E. & OWEN, N. 2010. Relationships of Land Use Mix with Walking for Transport: Do Land Uses and Geographical Scale Matter? *Journal of Urban Health*, 87, 782-795.
- FRANK, L., ENGELKE, P. & SCHMID, T. 2003. *Health and community design: The impact of the built environment on physical activity*, Island Press.
- GILES-CORTI, B., BULL, F., KNUJMAN, M., MCCORMACK, G., VAN NIEL, K., TIMPERIO, A., CHRISTIAN, H., FOSTER, S., DIVITINI, M., MIDDLETON, N. & BORUFF, B. 2013. The influence of urban design on neighbourhood walking following residential relocation: Longitudinal results from the RESIDE study. *Social Science & Medicine*, 77, 20-30.
- LITMAN, T. 2006. The future isn't what it used to be : Changing trends and their implication for transport planning. *ITE Journal*, 76, 27-33.
- LUND, H. 2003. Testing the Claims of New Urbanism: Local Access, Pedestrian Travel, and Neighboring Behaviors. *Journal of the American Planning Association*, 69, 414-429.
- QTMR 2012. Household Travel in Toowoomba. *In: QLD TRANSPORT AND MAIN ROADS, I. T. P., TMR MODELLING, DATA AND ANALYSIS CENTRE (ed.). Brisbane, Queensland: Queensland Government.*
- QUEENSLAND, S. A. S. O. 2011. *Next Generation Planning Brisbane*, Council of Mayors (SEQ).
- RANDALL, T. & BAETZ, B. 2001. Evaluating Pedestrian Connectivity for Suburban Sustainability. *Journal of Urban Planning and Development*, 127, 1-15.
- SAELENS, B., SALLIS, J. & FRANK, L. 2003. Environmental correlates of walking and cycling: Findings from the transportation, urban design, and planning literatures. *Annals of Behavioral Medicine*, 25, 80-91.
- SCORE, W. 2013. *Walk Score* [Online]. Available: <http://www.walkscore.com/AU-QLD> [Accessed 7 May 2013].

Brisbane's urbanism: looking for an identity. What can we learn from Inala.

Kelly GREENOP* The University of Queensland, Australia
Dr. Sébastien DARCHEN, The University of Queensland, Australia
Author ID:

Abstract

This paper draws on the Inala case study to develop guidelines to incorporate place identity considerations in contemporary Brisbane's urbanism. We critically analyse the emergence of the New World City marketing strategy and the New City Centre Master Plan associated to it. Our conclusion is that a balance between economic objectives (positioning Brisbane as key player in the Asia-Pacific) and the development of an authentic identity (through public involvement) still needs to be achieved. We provide recommendations at the end of the paper.

Introduction

Urban planning in Queensland is known as having been shaped by a pro-development culture. This translates strongly in the design of Brisbane's public spaces which we argue still suffer from an 'identity crisis' despite recent initiatives (e.g., Brisbane City Council's City Centre Master Plan, 2012; New City Plan, 2013) that are clear attempts to foster public consultation on how to generate a sense of place and to confer a more urban identity to the Brisbane CBD. This appears as a key element for the development of an enhanced identity for Brisbane that would also contribute to its status as a 'New World City'. In this paper we argue that instead of developing or (re)developing urban areas according to the latest commercial trend some guidance should be provided to preserve the identity of Brisbane and also to create a sense of belonging based on the history of specific places. Our point is that planning professionals should create "places" (or support the recognition and enhancement of existing places) and not simply "spaces". Based on the lessons learned from the case of Inala we propose guidelines to inform the planning practice and to create a sense of place in the broader Brisbane context. We argue that this will lead to a more authentic version of place, in line with place theorists. Ultimately the paper concludes on directions to develop a Brisbane urbanism in the context of an emerging city, inclusive of its past but also looking towards the future as a 'new world city'.

From a theoretical point of view, the paper is based on the concepts of place and sense of place. Places are composed of three interrelated components that give meanings to place: the physical setting, activity and meaning. For example Relph (1976) referring to Lynch (1960) associates the identity of a place with the ability to evoke human senses through qualities that make it distinctive from other places. We also draw on Augé's (1995) work examining the plethora of 'non-places' that he argues characterise many modern cities, and the antithesis of this, the creation of authentic place.

We use the case study of the Brisbane suburb of Inala, located in the suburban outer southwest and characterised by public housing and a proportionately large population of migrant and Indigenous communities, to examine place-making in Brisbane. We utilise ethnography to examine residents' attachment to and identification with place, as well as the

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 demographic, socio-economic and other quantitative aspects of place that characterise Inala. We combine these factors with an examination of the urban planning of the suburb and changes to this over time, to discuss how an authentic, resilient and sustainable place requires a combination of community, government and individuals to develop and maintain this authenticity.

Based on this case, we present recommendations to achieve a balance between positioning Brisbane as key player in the Asia-Pacific and creating a sense of place. Creating a sense of place has been developed incrementally over time, and often involving initiatives driven from within the Inala community itself, rather than through a broad strategic process, but we examine how planning and other bureaucratic regimes have affected place-making in this location.

One of the strategies that we wish to put forward is the importance of acknowledging the history of a place and the cultures of its people when developing place-making strategies. First we define place-making strategies as applied by planning professionals and then we develop an alternative approach - based on the case of Inala - to enhance the symbolic value of urban spaces.

As Brisbane and South East Queensland works to plan for its increasing population, and the development of existing places to increase their cohesiveness and social capital (e.g., Logan and developing areas such as Springfield) issues of community identity, sustainability and inclusiveness become increasingly important for planners and policy makers. We argue that a community-centred, identity-focussed approach is an important consideration in this developing debate.

Theory: towards a distinction between place and non-place

There is a large corpus of works in urban planning focusing on the urban form and sense of place. Our aim here is not to present an exhaustive list of works but to explain how the dichotomy of place/non-place is informing our analysis of both Inala and recent initiatives to improve city and regenerate Brisbane's City Centre. While place theory is extensive, within Australia there are few examples of the examination of places based on these theories, resulting in what we argue is a disconnected approach to place-making by urban designers, planners and the state. We seek to inform the ways in which city places can be successfully made, remade and maintained through a more thorough understanding of what constitutes authentic place, informed by both the literature and the short case studies that we undertake.

Kevin Lynch (1960) has identified criteria to evaluate the performance of urban environments: 1. Vitality; 2. Sense; 3. Fit; 4. Access; 5. Control; 6. Efficiency and justice. Kevin Lynch (1960, p. 6) defines "the identity of place simply as that it provides its individuality and distinction from other places and serves as a basis for its recognition as a separable entity."

Place theorists recognise that places are not only comprised of their physical and experiential qualities in the present, but of their associations with people, events and histories. The classic geographic definition of place by Agnew states that place is comprised of location, locale and sense of place (Agnew 1987, 28); locale is defined as the setting which allows for social interactions to occur, and sense of place as the emotional

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 associations bound up with place. Similarly, geographer David Harvey, stresses that not only the physical, but the social is important in place; places are socially constructed and made meaningful through social processes (Harvey 1993, p. 5). To this we want to stress the importance of the recognition of locale and sense of place in the creation or regeneration of places, and discuss how these aspects of place are challenged by planning that considers perhaps too fully the physical aspects of place rather than the entirety of place.

To demonstrate that this holistic approach to place is not new, but nevertheless essential, we draw here on the work of Gehl (2010) and, much earlier, Jacobs (1961) and consider their planning proposals in the context of place. Current place-making strategies can be considered as a reaction to the consequences of modernist planning and the modernist movement in architecture, which many critics claimed created standardised places that lacked character and history. While we do not agree that all modernism falls into this category, the criticism of character-less places and what is lacking is important to consider. Jan Gehl's (2010) idea of "life between buildings" and his broader approach of the "human dimension" that according to him has been an overlooked aspect of urban planning, are obvious reaction to the diminishing urban street life, here Gehl (2010) refers to Jane Jacobs' *The Death and Life of Great American Cities* (1961). Jacobs (1961) - cited by Gehl (2010, p. 3) - pointed out that the increase of car traffic and the urban planning ideology of modernism that separates the uses of the city into separate zones would put an end to city life. Gehl (2010, p. 6) sees "the human dimension" as a necessary new planning dimension: "urban planners and architects must reinforce pedestrianism as an integrated city policy to develop lively, safe, sustainable and healthy cities." Gehl (2010, p. 6) insists on: "strengthening the social function of city space as a meeting place that contributes toward the aim of social sustainability and an open and democratic society." Both Gehl and Jacobs before him argue for a recognition of place-creating that accounts for the various aspects of place, the physical, social and emotional.

We can also cite Jane Jacobs and her idea of "vitality of neighborhoods" that has been reused lately in the Creative City approach to urban planning (See Darchen, 2013). Jane Jacobs insisted that specific components should be part of a neighborhood: diversity of social groups, public spaces, etc.

French anthropologist Marc Augé further criticises both modernist and post-modernist place making, dubbing many locations in the era of supermodernity as "non-places". According to Augé (1995) these non-places: "designate...two complementary but distinct realities: spaces formed in relation to certain ends (transport, transit, commerce, leisure) and the relations that individuals have with these spaces" in opposition to "anthropological places" that create the social. Non-places are places of transience like international airports; motels and highways, they are generic places that according to Augé (1995, p. 94): "create solitary contractuality".

Augé (1995) explains that the distinction between places and non-places derives from the opposition between Place and Space. According to Augé: "the term 'space' is more abstract in itself than the term 'place' whose usage refers to an event (which has taken place), a myth (said to have taken place) or a history (high places)" (1995, p. 82).

In this paper we use the distinction between places and non-places that we find more explicit. When applied to planning we believe that Global urbanism replicating similar urban projects from one place to another contributes to the development of non-places. On that point Haila (2006, p. 285) refers to the operation of global actors to create an international image for the city. She refers to Zukin (1992): "the wordly superstars, including developers, architects and private-sector financial institutions" design the landscape in all global cities"; thus contributing to the development of "non-places".

Situating 'place identity' within social sustainability

Within place theory, the concept of place identity is particularly useful when analysing the ways in which places are used and in what regard they are held by their community. We also use the more recently developed concept of social sustainability to examine places, and situate place identity within this concept in order to link place theory and place-making.

Place identity is a difficult concept to define, but geographers, planners and architects all stress the importance of the links between people and place, and the ways in which places can contribute to the identity of users, and determine their identity in terms of the activities, associations and histories developed in place. Place identity is sometimes discussed as a component or synonym of 'sense of place' and we draw on both place identity and sense of place here to get to the heart of what matters about place, for people.

Relph describes how the "physical appearance, activities and meanings are the raw materials of the identity of places." (1976, p. 48) In the emerging literature on social sustainability, a 'sense of place' is one component that contributes to socially sustainable communities. According to Dempsey et al. (2011), indicators for socially sustainable communities are as follows:

- Interactions with other residents and social networks;
- Participation on collective community activities;
- Pride or sense of place;
- Residential stability (low turnover of residents);
- Security (lack of crime and disorder).

Furthermore, Davenport and Anderson (2005) explain that places "play a vital role in developing and maintaining self and group identity of the people; place identity is also defined as "the way in which a place informs the identity of a person or people." (Proshansky et al., 1995). The notion of place identity or sense of place is also closely linked to the concept of place attachment. Shamsudin and Ujang (2008, p. 400) define "place attachment" as a form of bonding between the person and a setting, while Hildago and Hernandez stress the desire to stay close to a place as being key to attachment (2001, p. 274).

In previous work we made the point that place identity could be threatened by regeneration initiatives with the example of the Fortitude Valley renewal plan (Darchen and Ladouceur, 2013). Historically, social sustainability has not been a strong component of urban planning in Queensland and certainly not a strong focus of previous renewal initiatives (Darchen and Ladouceur, 2013). However, regeneration plans are now increasingly recognising the

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 impacts of regeneration initiatives on local communities, social sustainability is starting to be a key component of planning and urban transport initiatives (e.g., Gold Coast rapid transit corridor Master Plan includes a strong component on social sustainability issues) (Interview 1).

In this paper we are making the point that place-making strategies should go further than renovating places to attract new residents and new business activities. Place-making strategies should recognise the history of places to foster a sense of belonging and place identity. In that regard, Newman and Jennings (2008, p. 146) propose strategies to foster a sense of place:

- Protecting important existing elements of their natural and cultural heritage;
- Designing to make historical and current social and ecological processes more visible;
- Using cultural practices and the arts to nurture and deepen a sense of place;
- Discovering city "songlines".

We argue that the creation of an authentic places should be the key goal of urban strategies and improvements. The theories of place making that encompass identity, history, sustainability and community are all indicated as essential to such an authenticity. We now discuss the importance of the increasingly recognised role of Australian Aboriginal communities and their place histories and sense of place in the post colonial Australian city.

Authentic places: starting with Aboriginal place

The importance of place to Australian Aboriginal and Torres Strait Islander communities is well known and urban Aboriginal populations are no different. Place, in the specific concept of *country* that embodies a person's links to history, spirituality, family and identity is central to many Aboriginal and Torres Strait Islander people's lives into the contemporary era (see for example Sutton, 1995, 2003). While anthropologists have explained *country* in various ways, from the architectural perspective architect and academic Kevin O'Brien explains *country*:

"Country is an aboriginal Idea. It is an Idea that binds groupings of aboriginal people to the place of their ancestors, past, current and future. It understands that every moment of the land, sea and sky, its particle, its prospects and its prompts, enables life." (O'Brien 2012)

For many Aboriginal people their historical forced exclusion from *country* and places of importance does not necessarily reduce their connection or commitment to places that are now the sites of cities such as Brisbane. Native title claims over urban areas such as Perth (Bennell v Western Australia [2006] FCA 1243) (National Native Title Tribunal 2006) and Brisbane are testament to Aboriginal people's commitment to connect with and be acknowledged as ongoing owners of their *country* (National Native Title Tribunal 2013, 2013a).

Clashes between forces of gentrification within urban areas, and both the attachments and the difficulties that Aboriginal people face within cities are not easy to resolve. The differing goals of different stakeholder groups, often based on the variation in sense of place or place identity, can result in resistance to place changes, and loss of an existing place identity can occur when urban development does not include principles of social sustainability. Shaw's examination of Redfern, an important location for urban Aboriginal people in Sydney, and

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 the recent gentrification of the suburb, in *Cities of Whiteness* (2007) shines an important light on the need for authenticity and realistic goals in place-making activities. For Aboriginal people within urban areas of Australia, especially capital cities, there is a danger of a second wave of 'colonisation' of place occurring which once more excludes, marginalises or ignores the needs of urban Aboriginal and Torres Strait Islander peoples, when socially sustainable processes are not considered. While the fields of anthropology, cultural studies and history have considered their colonial legacy, the disciplines of architecture and planning have barely acknowledged their roles in the exclusion, isolation, segregation and oppression of Aboriginal and Torres Strait Islander peoples in Australia.

Recognition of Aboriginal prior ownership of and special places within cities has occurred at various levels from the production of guidebooks, such as *The Melbourne Dreaming: a guide to the Aboriginal Places of Melbourne* (Eidelson 1997) and *Aboriginal Sydney* (Hinkson and Harris 2001, 2010), but no such guide or comprehensive account of Brisbane's existing or historical Aboriginal places exists.

Historian Peter Read (2000) argues that for many non-Aboriginal people, and especially Anglo-Australians, there is a need to come to terms with the underlying and continuing importance of Aboriginal history and origins within our cities. His account of finding 'belonging' within his favourite Sydney childhood places, through deep engagement with Aboriginal traditional owners, establishes acknowledgement of traditional custodianship of city places as his preferred way of connecting to place authentically, but also demands connection with traditional owners in ways that could become onerous rather than engaging.

O'Brien's ongoing *Finding Country* (2006-current) project challenged designers to imagine the city half emptied of its population and what could be revealed in such a removal, such as the underlying *country* of Aboriginal owners and their continuing connections. Brit Andresen and Mara Francis' running up entry for the Australian CAPITheticAL competition (2013) which posited a model for a renewed Australian capital city based on their *Sedimentary City* concept which recognises multiple layers of history, including the 'First City' being the Indigenous history and use of an area (Andresen and Francis, 2013). O'Brien, and Andresen and Francis' imagined or potential futures attempt to determine a more authentic vision for place that, returning to place theory, encompass not only physical but social and cultural aspects of place .

These approaches, we argue, contribute to an authentic (if hypothetical) approach to urban placemaking that acknowledges both the traditional ownership of cities by their Aboriginal custodians, and the urban forms that embody memories an existing places identities for Aboriginal, Torres Strait Islanders and more recent arrivals.

We argue that a sense of place identity cannot be created from top-down processes but must include elements of history, an understanding of place meaning and the layers of meaning that exist for places, including different ethnic and cultural groups, as well as for different ages or users.

Research question and methods

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013

Following our literature review our research question is as follows: "How can we achieve a balance between creating an authentic sense of place through planning strategies and positioning Brisbane as a key player in the Asia-Pacific region". We discuss in the conclusion if these objective are compatible or mutually exclusive. We consider the case study of Inala as an example of the development overtime of an authentic sense of place, we thus explore this case study to provide recommendations for the orientation of Brisbane's urbanism. To inform the current situation of both the orientation of Brisbane's urbanism and the influence of the New World City marketing campaign we performed semi-directed interviews with key informants (see list at the end of the paper).

The Inala research was conducted during an extended period of fieldwork for Greenop's PhD research (2013). Both formal research interviews and and informal participant observation was conducted between 2007 and 2012. Research began with 'initial interviews' which were unpaid and short, to determine the suitability and interest of the participant to undertake an 'in-depth interview' which was paid and of a longer duration. These were sometimes recorded, but at the request of participants, not always. Approximately 40 in-depth interviews were conducted with sometimes more than one participant per interview. From this initial research an increasing amount of participant observation was undertaken with participants who were willing to engage in the research on a long-term and highly involved manner. This is in line with ethnographic methods common in anthropology (Spradley 1979). Fieldwork notes, videos, photographs and reflection allowed for the development of the thick description of ethnography and this was tested through seeking contrary views from within the community.

Limitations on this method have been widely discussed (e.g., Stewart 1998), but nevertheless it allows for greater insights into the how and why of place relationships than less subjective methods such as surveys. This method allows us to explore people's direct experiences of place, and their developing sense of place over time. It answers the call by place theorists such as Lewicka (2011) for further detail not just on what places and people-place relationships are, but how they are formed and what effect the physical environment may have upon these relationships.

Brisbane's identity: the emerging city?

Brisbane still suffers an identity crisis compared to the dominant metropolises that are Melbourne and Sydney. Brisbane has a reputation within Australia as lacking an urban tradition, the identity of Brisbane is still very much one of a suburban, low density city (Fulton, 2011), with even locals at times referring to it as still a 'big country town' dominated by a suburban identity. The conception of Brisbane as 'backward' and suburban, in need of an urban identity seems to still drive the response in urban strategies today. The trend is to reverse this suburban identity into an urban identity, Urban Renewal Brisbane (URB) in the document *The making of a New World City, 1991-2012* states that planning and renewal initiatives are closely linked to the objective of promoting Brisbane as the 'New World City'. In this process of transforming the identity of Brisbane from a suburban 'big country town' into a metropolis, the work of (URB) is presented as being central (Brisbane City Council, 2013). This process of identity change is best embodied in the 2007 City Centre Master Plan (CCMP) with key innovations being promoted: 1. Revitalisation of laneways and small places; 2. Development of an architectural language inspired by sustainable subtropical

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 design; 3. development of distinct commercial precincts and knowledge clusters in the CBD; 4. Deliver catalytic demonstration projects (BCC, 2013).

The message of URB in the document "The making of a new world city, 1991-2012" is clear: planning incentives starting in the 1990s with the Building Better Cities program are closely related to the objective of building an urban identity for Brisbane that is also international: *"Brisbane is the 'Gen Y' of international cities: youthful, progressive and confident, home to Australia's premier live music scene, the nation's largest gallery of Modern Art and one of the most important centres for digital games design outside the USA. Brisbane is the nation's gateway to the Asia-Pacific markets and 'knowledge now accounts for much of the city's exports."* (BCC, 2013, p. 8-9).

This focus on the new, rather than any aspects of Brisbane's history, we argue may be caused by the crisis of identity surrounding the image of Queensland under the Joh Bjelke-Petersen era, during which political freedom, cultural diversity, Aboriginal rights and many other aspects of social progress were oppressed. We argue that the dating of the beginning of Brisbane as a new world city from 1991 is no coincidence in terms of the socio-political history of Queensland. The corrupt Bjelke-Petersen government was ousted in 1987 and the Fitzgerald Inquiry into political and police corruption was conducted from 1987-1989, clearing the way for an era of political renewal in Queensland. In 1988 the World Expo was held in Brisbane bringing a new focus on the importance of engagement with domestic and global ideas, the arts, tourism and creativity. 1991 marked the beginning of the Labour Lord Mayorship of Jim Soorley, who oversaw planning changes such as the focus on Brisbane's river as a place of entertainment and recreation rather than industry, and saw the city open to new ideas such as outdoor dining, and densification and the movements to social justice initiatives such as the city taking a role in assistance for homeless people. In parallel, the reforming State governments of the National Party Premiers Mike Ahern and Russell Cooper saw the relaxation of laws on rights to protest and an end to the voting gerrymander. Federal recognition of Aboriginal rights to land through Native Title were also being established (following the *Mabo no 2 v State of Queensland* decision in the High Court in 1992) (High Court of Australia 1992). In short this was an era of unprecedented political, social and urban renewal in Queensland, and the new world city idea reflects this ongoing process of modernisation in the state.

There is strong push currently to develop a more forward-thinking identity for Brisbane (Interview Brisbane Marketing, June 7th 2013). This process started in November 2007 and was an 18 month long process, 36 000 interviews were conducted with business but also community groups (should have the stakeholders involved); the idea behind the redefinition of Brisbane's identity as new world city resolves around the acronym LEADS (Lifestyle obsessed, Environmentally friendly, Asia Pacific gateway, Digitally connected, Socially inclusive). Furthermore, we were able to learn more about the slogan: "Australia's New World City" (see figure below).

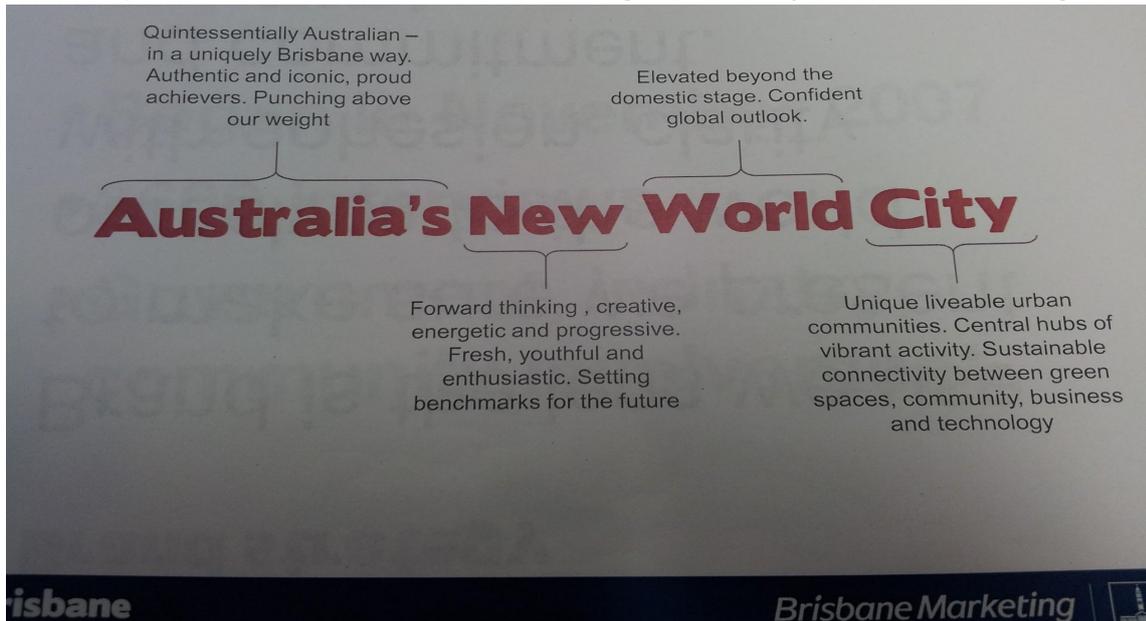


Figure 1. Brisbane's New World City Marketing Strategy

Source: Brisbane Marketing

“Australia’s” refers to the following: *Quintessentially Australian - In a uniquely Brisbane way. Authentic and Iconic, proud achievers. Punching above our weight.* “New” refers to: *Forward thinking, creative, energetic and progressive. Fresh, youthful and enthusiastic;* ‘World’ refers to: *Elevated beyond domestic stage. Confident. Global outlook;* ‘City’ refers to: *Unique liveable urban communities. Central hubs of vibrant activity. Sustainable connectivity...*

According to our interviewee, the evolution of Brisbane’s identity has a starting point with World Expo “Leisure in the era of technology” of 1988 which is considered as a cultural turning point in Brisbane’s history. The marketing campaign started in November 2007 and was an 18 months process; it included participation from different institutions, the industry and community involvement through a total of 36 000 interviews (Brisbane marketing); the campaign was then outsourced to private consultants. According to our interviewee, the marketing strategy is constantly evolving but the brand message is based on the following points:

- An emerging global city;
- Innovating on what’s important from the past to set the tone for our future;
- Ranked the second best city in Asia for foreign investment;
- Named a ‘Gamma World City’ (gaining sense of confidence and desire to look to the future);
- Recognised for being friendly, tolerant, clean, green, sustainable, vibrant, youthful, energetic and creative.

The branding of Brisbane is very much orientated towards the positioning of Brisbane as a major economic player in Asia-Pacific (e.g., attraction of Chinese students to study in Brisbane). Brisbane is constantly working on the positioning of Brisbane on the international scale and as a major player (e.g., host of the next G20). Our interviewee recognised that the emphasis was not on celebrating the past even though the branding of Brisbane as a major tourist and cultural destination is part of the strategy (Interview 2). But the past is not very present in the development of Brisbane’s new identity as a “World city”. The communication

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013

branch of Brisbane City Council (BCC) recognises that the "New World City" strategy is very much a Brisbane Marketing product although the strategy also reflects strongly the views of the Lord Mayor (Interview 3). According to our interviewee there are two component to the "New World City" concept: 1. Brisbane is a place where it is easy to do business; 2. Brisbane is place where people like to live. The second component translates into planning strategies in the New City Master Plan: the aim is to create 'urban hubs' where people can live, work and play (Interview 3). Community consultation has been a priority in the New City Master Plan, innovative methods (use of social media, creation of a social hub via internet) have been implemented to foster public consultation (Interview 3). For example Brisbane Urban Renewal organised the Ideas Fiesta Festival to encourage community input on the New City Centre Master Plan (Interview 3). The New City Masterplan includes key priorities: "Making it easier to do business in Brisbane"; "Protecting Brisbane's past and guiding future architecture", etc. (Brisbane City Council, 2013). However, through our interviews the building of a more urban identity is mainly based on making Brisbane a nice place to live and a place where it's easy to do business in the making of Brisbane's identity, the recognition of the past is rather limited and not viewed as a strong asset in building the New World City identity (our interviews).

The approach to Brisbane's identity in the new world city concept is very much driven by an idea of newness and a reinvention, or rebranding of Brisbane's identity, rather than an approach that includes its historical and cultural traditions. Brisbane's Indigenous heritage, which includes one of the largest Aboriginal and Torres Strait Islander populations in Australia, is not a key aspect of the creation of the New World City image, despite the cultural capital embedded in Australia's broader image of being home to the "world's most ancient living culture" (Tourism Australia 2013). We argue here that the future development of the new world city concept for Brisbane, that begins to include historical and social aspects of the city's history will encourage the development of a more complete and authentic place identity for Queensland. This, we argue, will result in a strategy that more successfully connects with Brisbane's residents and their place experiences, place identity and sense of place, which are key elements of socially sustainable planning practices (Dempsey et al., 2011).

We examine the slower and more community centred place identity and sense of place within the Brisbane suburb of Inala, created through both community-led and council funded projects that combine a sense of place with a desire to maintain or remake places according to the aspirations of local residents. We use this example of a suburb in Brisbane's outer south-west to discuss the development of a sense of place over decades, that is now being seen increasingly as multicultural, authentic and desirable. We argue that the Brisbane as an 'emerging city' should combine a strong role in the Asia-Pacific from an economic point of view but also be a place where local residents (from different cultural backgrounds) can have an input in the evolution of the city. This is why we find the case study of Inala as aspirational.

Inala: authentic place-making over decades

Greenop's study of Inala's Aboriginal community and their diverse and culturally based placed attachment formed part of her ethnographic study with members of the Aboriginal community within Inala (Greenop, 2013). What we argue that such attachment, sense of

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013
place and authenticity of place is achieved in Inala through the work of both locals and the state in creating places that operate to enhance community while acknowledging history.

Inala was developed as a housing commission suburb from the 1950s and soon became home to post World War II European migrants, Aboriginal and Torres Strait Islander families and non-Indigenous populations, all drawn in on the basis of housing need. Further changes in the demographics have included a large Vietnamese population and other more recent migrants including Polynesian and African families. While the compulsion to move into Inala was and often still is based on state housing, the stability of residence of many families indicates an ongoing place attachment, and the formation of supportive communities that allow residents to maintain their cultural values.

Local initiatives, such as community pre-schools, cultural groups and sporting teams, and support for these projects by the state and commercial interests, such as the Stylin'UP Indigenous Youth Festival supported by Brisbane City Council provide a deepening sense of place in Inala, based on these activities and the history that gathers around their continuation over time. The Stylin'UP motto: "Pride in self, pride in community, pride in culture" (Stylin'Up 2013) emphasises the place-based links developed through such programs which operate as a community driven, state-supported development of sense of place. Other enterprises in Inala, such as businesses that provide culturally specific foods, clothing and goods from Vietnam and the Pacific Islands, highlight the commercial opportunities that are being developed through such residential communities that maintain their stability over time.

While Inala has been in past decade the subject of the derision typically meted out to state housing suburbs, in more recent times the authenticity of cultures and the maintenance of tradition has been seen as valuable cultural capital that those in the more 'ordinary' nearby suburbs seek to acquire. While the exoticisation of place and formation of notions of the other for cultural consumption are far from the aim of place-making, the desire to see the patina of history and local forms of living based on a resident population are played out in these more recent recognitions of Inala's suburban places:

"Stepping through the back door...[of Inala Civic Centre] I found another world. A square surrounded by Asian grocers, eateries, fish shops and butchers, while in the centre men gathered to chat and play mahjong" (Brisbane News 2011, 11). Some comments from the neighbouring suburb of Forest Lake, a 'lifestyle community' created by developer Delfin in the 1990s and set on the shores of a large artificial lake, have raised concerns over the difference between Inala and Forest Lake stating that "[Inala] has wonderful community groups...Local community leader Rob Scott said Inala had greater community co-operation than Forest Lake. 'The design of Forest Lake has taken away from people's sense of ownership of the area because (developer) Delfin has done everything,' Mr Scott said. 'Now that Delfin has pulled out, the people of Forest Lake have to take up the slack and encourage community interaction'... 'Because Inala is a low socio-economic community, the people interact because they need to get council and State Government support for local initiatives and projects for the betterment of their area.'" (South-West News, 2008).

In short this description outlines the sense of place of Inala as superior to Forest Lake, based on the involvement of community groups in decisions and planning within the community. While not alleviating the socioeconomic disadvantage that Inala faces, this

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 approach seems to be envied by at least some neighbours in Forest Lake who sense the danger of becoming a non-place where the developer 'has done everything'. Further components of social sustainability are part of Inala's original planning including walkable local shops, schools, churches and playgrounds which formed important neighbourhoods hubs within the broader community. The street pattern of grids and a hierarchy of roads that is highly navigable and suitable for bus-based public transport is in contrast to the culs-de-sac approach of more modern suburbs, in which privacy and car-based transport are emphasised, but many argue leads to isolation and disconnected communities (Lucy and Phillips 2006).

Within Inala many developments that have contributed to the high levels of social capital within the community began as community projects that then attracted state support. The Inala Indigenous preschool Wandarrah is an example, valued by many members of the indigenous community in Inala, that demonstrates that community development in terms of education, publically accessible facilities and community controlled organisations contribute to sense of place, just as much as more obvious urban facilities such as open spaces, cafes and entertainment precincts.

The place identity of some of Inala's residents attests to the historical and continuing development of its sense of place. One resident stated that despite moving to Inala only to access public housing, "Inala is home now, for life" (Greenop, 2013 p.144). This place attachment leads to stability in place, created in part by the support of a culturally specific community, and aligns with the components of social sustainability outlined by Dempsey et al. (2011).

Here are the key points from the Inala case study that we find relevant to inform the planning practice in Brisbane:

- Place identity is related to the valuing of urban amenity for people of all ages, including social, educational, sporting and cultural facilities
- Place identity builds up over time (over decades) based on activities and experiences that occur in place
- High levels of social capital and place identity are interconnected
- Strong place identity leads to socially sustainable communities (low turnover of residents enables investment in local activities, fosters the development of a sense of place and contributes to consolidation of social networks and sense of belonging)

Conclusion

The current version of the new world city for Brisbane offers a version of place that is developing, and requires further components of history and community interaction to fulfill its potential in creating an authentic, and meaningful place for both marketing purposes that aligns with residents' understandings of and aspirations for place. The occupation of the city as derived from the LEADS themes indicates a city based on being exceptional, rather than facilitating a life for its citizens. The imagery of the new world city also indicates spaces of entertainment, consumption, socialization and celebration, urban hubs where we can "live work and play" but to what extent does it reflect people's aspirations and needs to refer to Gehl's (2010) concept of "Planning for people". The everyday activities of work, school, caring for families (of all ages), shopping and interacting with people in ordinary ways are not yet put forward as making part of the city's future, despite their being the bulk of one's

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013 experiences and critical to most people's quality of life. Acknowledging the Indigenous, migrant and political context of places within the city, will connect with both an authentic version of Brisbane as understood by its residents, and also encourage their contribution to further development of places through community engagement with planning processes. In other words the New World City and its associated Brisbane's urbanism might work in an oversimplified reality where the complexity of Australian contemporary society is eluded. Key issues that needs to be addressed are : recognition of increasing migrant population in Brisbane; recognition of aboriginal past in developing a sense of place. An encouraging sign is the willingness to foster public consultation but it is not likely to be sufficient to resolve the tensions around the recognition of Brisbane's darkest history, this would require more political commitment. At the moment, resolving this issue appears as secondary compared to positioning Brisbane on the Asia-Pacific map from an economic perspective. To answer our research question, creating authentic places and consolidate Brisbane's economic competitiveness are not incompatible but currently the second objectives is achieved at the expense of the first objective.

Recommendations

Based on the case studies and literature discussed above, we make a number of recommendations to the ongoing work of the Brisbane New World City marketing campaign and the planning strategies associated to it.

1. Consultations with community regarding the urban planning and place-making within Brisbane should be ongoing and genuinely seek to implement community needs and goals. Community based, 'bottom-up' approaches are required to properly engage communities with place at the neighborhood scale and should be included alongside 'top-down', strategic policies concerning the city as whole.
2. The approach should acknowledge and take account of the process of creating place identity, which develops over time. People's experiences of place, events and ongoing relationship with a place will affect their place identity or sense of place, hence not only physical strategies but social, economic and cultural considerations need to be incorporated into urban plans.
3. Evaluation of the place-making effects of the strategies should be conducted over time to 'check in' with communities and stakeholder groups ranging from resident to businesses which are affected by changes made to particular areas. This will feed into experiences of place that can reinforce place identity, and ensure that place authenticity can be developed and carried by local communities.
4. Strategies should allow for the development of place authenticity through room to localise and tailor planning approaches to specific place-based needs and goals. The creation of places that genuinely reflect the diversity and specifics of Brisbane's cultural communities, including an acknowledgement of their histories, will strengthen the New World City aims of Brisbane being a unique and vibrant cultural location.

References

- Agnew, J. A. (1987). *Place and Politics The Geographical Mediation of State and Society*. Boston: Allen & Unwin.
- Andresen, B. and Francis, M. (2013). CAPITheticAL competition entry, www.a-uic.com

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013

Augé, M. (1995, 2008). *Non-Places. An introduction to the anthropology of Supermodernity*. London: Verso.

Bennell, (2008). Federal Court of Australia - Full Court (2008). *Bodney v Bennell* [2008] FCAFC 63 (23 April 2008). Australasian Legal Information Institute.

Brisbane City Council (2012). City Centre Masterplan. <http://www.brisbane.qld.gov.au/planning-building/planning-guidelines-and-tools/city-centre-master-plan/index.htm>

Brisbane City Council (2013a). The making of a new world city, 1991-2012. www.planning.org/awards/Brisbane/pdf

Brisbane City Council (2013b). Planning for the future: The draft new city plan. May 2013.

Brisbane News, (2011) Finding Flavour. 19 January, pp.10-11.

Darchen, S. (2013) The creative city and the redevelopment of the Toronto Entertainment District: A BIA-led regeneration process. *International Planning Studies* 18 (2): 188-203

Darchen, S and Ladouceur, E. (2013). Social sustainability in urban regeneration practice: a case study of the Fortitude Valley renewal plan in Brisbane. *Australian Planner*. <http://www.tandfonline.com/doi/abs/10.1080/07293682.2013.764909#.UZQvico998E>

Davenport, M.A and Anderson, D.H. (2005). Getting from sense to place-based management: An interpretive investigation of place meanings and perceptions of landscape change. *Society & Natural Resources*, 18, 625-641.

Dempsey, N; G. Bramley, S. Power and C. Brown. 2011. The social dimension of sustainable development: Defining urban social sustainability." *Sustainable Development* 19 (5): 289-300.

Eidelson, M. (1997). *The Melbourne dreaming: a guide to the Aboriginal places of Melbourne*. Canberra: Aboriginal Studies Press.

Fulton, E. 2011. "Brisbane urban construction: Suburban dreaming." *A Journal of Media and Culture* 14 (4) Accessed July 2012. <http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/376>

Gehl, J. (2010) *Cities for People*. Washington: Island Press.

Greenop, K. (2013). 'It gets under your skin': Place meaning, attachment, identity and sovereignty in the urban Indigenous community of Inala, Queensland. PhD Thesis, School of Architecture, The University of Queensland. (forthcoming)

Haila, A. (2006). The neglected builder of the global city. In Brenner, N and Keil, R. *The Global Cities Reader*. London and New York Routledge, pp. 282-287.

Harvey, D. (1993). *From space to place and back again: Reflections on the condition of postmodernity*. In J. Bird, B. Curtis, T. Putnam, G. Robertson, and L. Tickner (Eds.), *Mapping the Futures Local cultures, global change*, pp. 3–29. London: Routledge.

Hidalgo, M. C. and Hernandez, B. (2001). Place attachment: Conceptual and empirical questions. *Journal of Environmental Psychology* 21, 273–281.

High Court of Australia. (1992). *Mabo v Queensland (No 2)* [1992]. Commonwealth Law Reports HCA 23; (1992) 175 CLR 1 (3 June 1992).

Hinkson, M. and Harris, A. (2001, 2010). *Aboriginal Sydney: A guide to important places of the past and present*. Canberra: Aboriginal Studies Press.

Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Random House.

Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology* 31(3), 207 – 230.

Lucy, W. and Phillips, D. (2006). *Tomorrow's cities, tomorrow's suburbs*, Chicago; Washington: Planner's Press, American Planning Association.

Greenop & Darchen, Brisbane's Urbanism: looking for an identity, 49th ISOCARP Congress 2013

Lynch, K. (1960). *The image of the city*. Cambridge, MA: MIT Press.

National Native Title Tribunal (2006). Proposed determination of native title—Single Noongar application Bennell v State of Western Australia [2006] FCA 1243. *Native Title Hot Spots* (21), 1–22.

National Native Title Tribunal. (2013). Claimant Summary - Jagera People #2, http://www.nntt.gov.au/Applications-And-Determinations/Search-Applications/Pages/Application.aspx?tribunal_file_no=QC2003/015

National Native Title Tribunal. (2013a). Claimant Summary - Turrbal People, http://www.nntt.gov.au/Applications-And-Determinations/Search-Applications/Pages/Application.aspx?tribunal_file_no=QC1998/026

Newman, P. W. G. and Jennings, I.. (2008). *Cities as sustainable ecosystems : principles and practices*. Washington, DC: Island Press,

O'Brien, K. (2012). Finding Country website. <http://www.findingcountry.com.au>

Read, P. (2000). *Belonging: Australians, place and Aboriginal ownership*. Cambridge: Cambridge University Press.

Relph, E. (1976). *Place and Placelessness*. London: Pion.

Shamsuddin, S. and Ujang, N. (2008). Making places: The role of attachment in creating the sense of place for traditional streets in Malaysia. *Habitat International* 32, 399-409.

Shaw, W. S. (2007). *Cities of Whiteness*. Oxford and Melbourne: Blackwell Publishing.

Stewart, A. (1998). *The Ethnographer's Method*. Thousand Oaks, Calif. : Sage Publications.

South West News (2008). Inala hailed as top model. 2 April.

Spradley, J. (1979). *The Ethnographic Interview*. New York: Holt, Rinehart and Winston

Stylin'UP. (2013). Website http://www.stylinup.com.au/?page_id=2

Sutton, P. (1995). *Country Aboriginal Boundaries and Land Ownership in Australia*. Aboriginal History Monograph 3. Canberra: Aboriginal History Inc.

Sutton, P. (2003). *Native Title in Australia An Ethnographic Perspective*. Cambridge: Cambridge University Press.

Tourism Australia (2013). Unique Australian Experiences. Most Marketable Qualities. Tourism Australia website. <http://tourism.australia.com/industry-advice/unique-australian-experiences.aspx>

Zukin, S. (1992). The City as a landscape of power: London and New York as global financial capitals. In Budd, L and Whimster, S. (ed) *Global finance and urban living*. London and New York: Routledge.

Interviews

1. Urban designer, Brisbane based urban design firm, May 24th 2012.
2. Director of marketing and communication, Brisbane Marketing, June 7th 2013.
3. Corporate communication manager, Brisbane City Council, June 21st 2013.

The understanding of Beijing Cultural Spaces

Zongpei GU, China academy of urban planning and design, China

“The enduring competitive advantages in a global economy lie increasingly in local things.”¹

With the progress of globalization, urban culture becomes increasingly important. Beijing has a long history and rich cultural resources. But the space vectors of her cultural resources are being invaded in the process of urban growth. In the end of 2011, the municipal government decided to “turn Beijing into a city of prestigious cultural center of national demonstration and promotion and international significance.”² Building such a “Culture-enriched Beijing” pose an urgent quest to reexamine and analyze the current status of the city’s urban cultural space against the background of the new era.

1. Identification of Beijing’s Current Urban Cultural Space

“A nation’s cultural renaissance starts with a summary of its legacy.”³

Beijing’s long history and rich cultural resources laid a solid foundation for her cultural construction. An empirical study of the current status of her urban cultural space is the basis and prerequisite for further analysis. This article will discuss the current status of Beijing’s urban cultural space from her historical cultural space and contemporary-modern urban cultural space in a time sequence.

1.1 Historical Cultural Space

Before the establishment of People’s Republic of China, Beijing’s historical cultural resources can be divided into ancient time (before the opium war in 1840) and modern time(1980 – 1949).

1.1.1 Ancient Time

Beijing’s history as a city can be traced back to more than 3,000 years ago. Many of the surviving ancient cultural resources have high historic and artistic value. Because of their large quantity, this article selects national key cultural relics protection units for discussion, and classifies Beijing’s existing ancient cultural space resources into three types: religious culture, ancient city culture, and the royal culture.

Beijing’s existing historic cultural relics from before the Yuan Dynasty are mainly of religious culture in the forms of temples, pagodas, pedestals, and scripture tablets, etc. The cultural relics from the Ming and the Qing dynasties are more abundant, including considerable amount of relics of old city culture and royal culture, as well as those of religious culture. During the Ming and the Qing dynasties, the city of Beijing was extended on the foundation of the capital of the Yuan, which involved reconstructions of the enclosures, the imperial city and palace, and the royal altar. The result was a “masterpiece of city planning”⁴ in ancient China, and unique cultural and spiritual legacies for today. Apart from the national key cultural relics protection units, today’s traditional alleys and historic blocks are also important components of the old city culture.

1.1.2 Modern Time

From 1840 to 1949, China was first invaded by the western powers, and then plunged into decades of civil war after the establishment of the government of Republic China. During this period, city constructions stagnated, but cultural types became more abundant. Their influence on Beijing's present-day civilization is no longer limited to physical space. Certain folk custom and living styles continue to this day. So the studies of this period should not be limited to the national key cultural relics protection units.

The disintegration of the feudal system led to the decline of the royal culture. After the period of the Republic China, the royal properties were turned into museums and public parks such as the Palace Museum, Zhongshan Park, and Xiannongtan Temple, etc. Some cloisters have carried on the temple fair culture till today. The cultural resources survived the period of Republic China include office buildings, former residences of celebrities, traditional brand shops, and theaters, etc. They mainly concentrate within the Second Ring Road. War memorials are distributed mainly in the center and the west of the city, around the Fragrance Hills, and in Lugou Bridge district to the southwest of the city.

1.1.3 Spatial Characteristics of Historical Cultural Spaces

Through spatial integration of ancient and modern cultural resources, we can see that before the founding of the state, Beijing's historic cultural resources concentrated mainly at the former city location in the Ming and the Qing dynasties, located inside today's Second Ring Road and in the northwest part of the city. There were three types of architectures: royal property, religious buildings, and those of the republic of China. Their spatial sequence symbolized the feudal hierarchy and strict rituals in that historical period. Their ideological origin reflected the essence of traditional culture. (Figure 1)

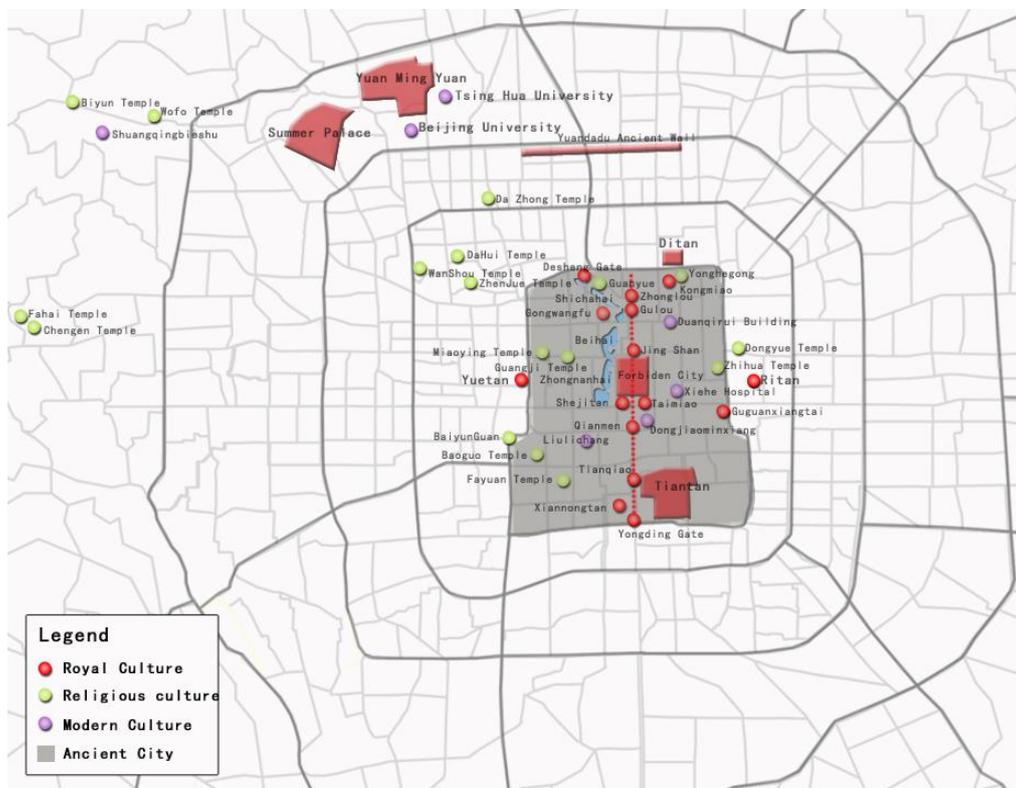


Figure 1 The Distribution of Beijing's historical cultural resources (self-made)

1.2 Contemporary and Present-Day Urban Cultural Space

1.2.1 Contemporary Time

In the early days of the People's Republic of China, Beijing's urban construction followed the policy of "turning consumer cities into producer cities", and focused on the development of industries, especially heavy industries⁵. Cultural development lagged behind. During the first Five-Year Plan period, Beijing went through large-scale urban development. Space designs for streets were explored and different styles of space models were developed. Before the outbreak of the Cultural Revolution, Beijing's overall urban spatial structure was readjusted with urban construction. The ramparts began to be removed. The Changan Avenue was transformed. During the 1950s and 1960s, a group of large public buildings were erected at key sites in the city. They included some cultural facilities of far-reaching significance such as the Top Ten construction, the Capital Theater, the National Art Gallery, and the Museum of Natural History. These cultural facilities mainly concentrated in the inner city areas along the Changan Avenue. At the same time, in the north of the city, the district of culture and education, represented by eight colleges, began to take shape.

Following China's reform and opening-up, Beijing saw another surge in urban construction. A group of important cultural facilities like the National Library and the China International Exhibition Center were built up. Until 1990s, the government had emphasized public interest and basic cultural needs in cultural facilities construction. At that time, the government was the primary investor and constructor in the field of culture⁶. By the end of 1980s, the opening and successful operation of Grand View Garden and Tianqiaole Tea Garden symbolized the beginning of autonomous development in Beijing's culture industry⁷. After the reform and opening-up, the cultural facilities tended to spread out from the old city toward later developed urban areas, and the differences between the northern and the southern districts started to appear.

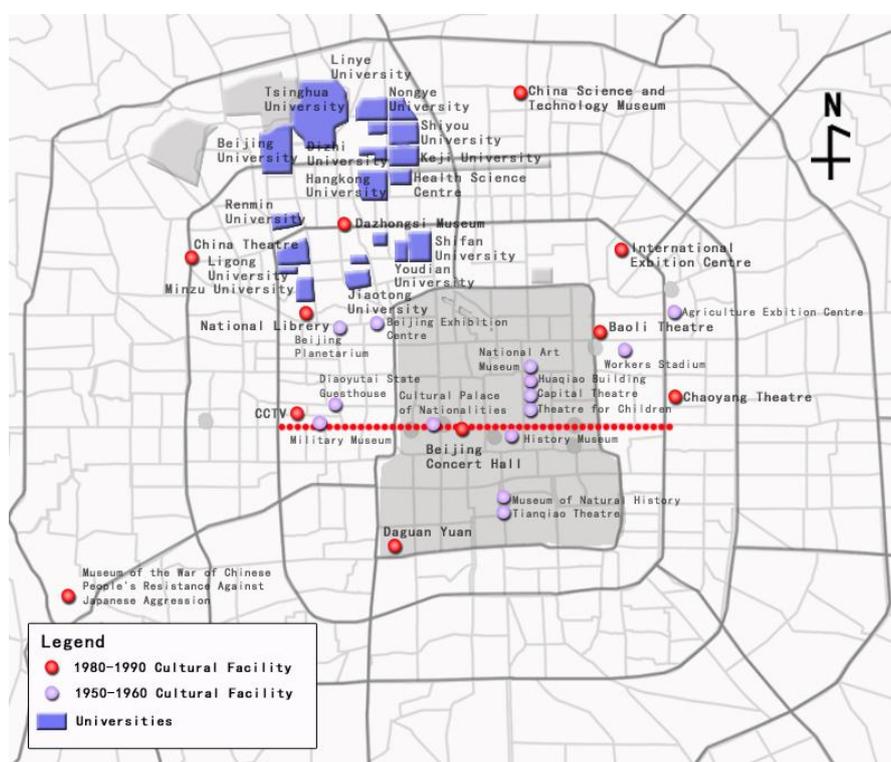


Figure 2 The Distribution of Beijing's urban cultural space after the founding of the state – early 1990s (self-made)

1.2.2 Present-Day Time

With the progress of reform and opening-up and urban development, Beijing's industry-oriented developmental pattern faces many problems. Industry structure adjustment is imperative. Besides, the comprehensive function of culture, especially its potential in economy, becomes increasingly clear. The government begins to reexamine the construction in the field of culture. Cultural facilities such as China Central Television and China Millennium Monument etc. have been built in this period. In their space layout, some large facilities (such as exhibition centers and gymnasiums, etc.) are located further north with the city's development and big events (such as the Asian Games). Meanwhile, cultural streets of special features begin to emerge. The launch of the Olympic project in 2003 upgraded the overall level of Beijing's urban construction. The Olympics Park has become a new urban cultural center.

In 2005, the government decided to vigorously develop cultural creative industry. Centers of cultural creative industry began to pop up around the city. Some old factory buildings have been transformed into such centers, represented by the "798 Art District", a gradually formed autonomous center since 2001. Other centers latterly rising to importance include CBD International Media Cultural Creative Industry Park in Chaoyang District and Digital Entertainment Industry Park in Shijingshan District, etc. in 2009, the State Department gave permission to construct the first National Autonomous Innovation Demonstration District in Zhongguancun. (Figure 3)

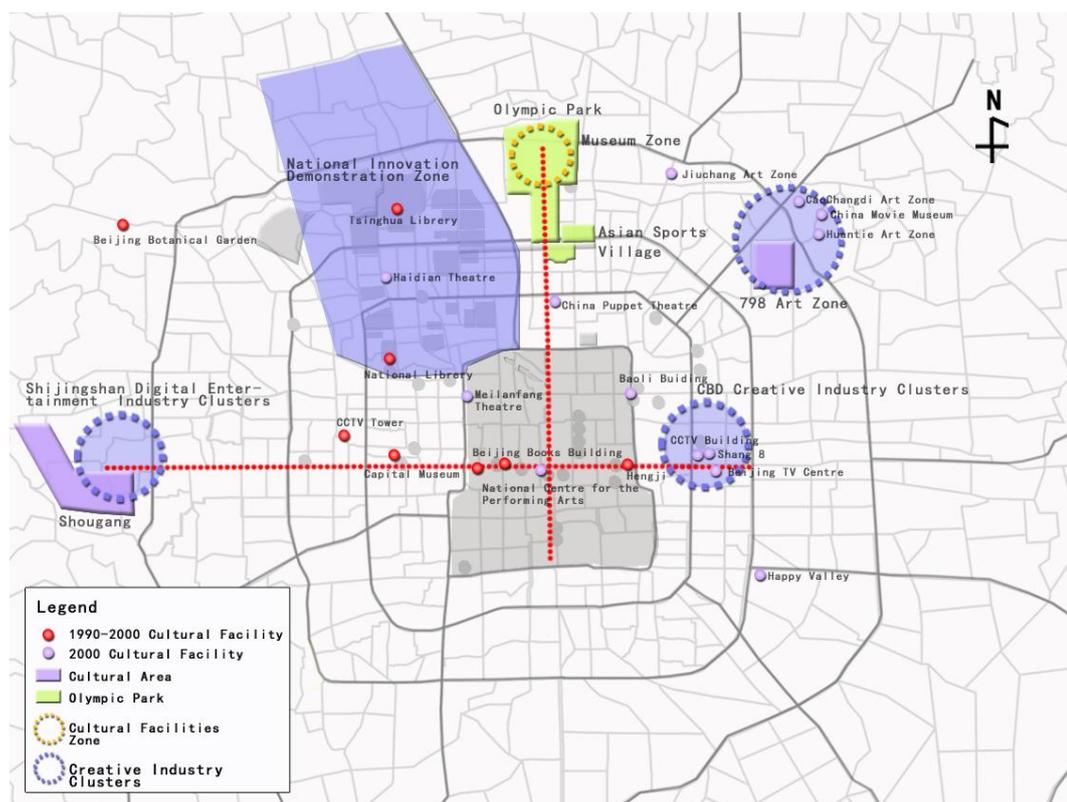


Figure 3 The Distribution of Beijing's urban cultural space after 1990 (self-made)

1.2.3 Contemporary and Present-Day Urban Cultural Spaces Characteristics

On the whole, after the founding of the state, Beijing's urban cultural resources noticeably concentrated in the north part of the city. Apart from the "horizontal line" along the Changan Avenue (from Shijingshan to CBD) and the "vertical line" that extends the historic city axis (to

the Olympics Park), Zhongguancun and the Science and Educational Film District in the northwest, as well as the “798 Art District” in the northeast, are also main urban cultural spaces. Comparing the overall space structure with the traditional society, Beijing is facing different developmental scenarios in modernization construction. On the one hand, industrialization has freed productivity, followed by large-scale urban reconstruction and unavoidable destruction of historic culture; one the other hand, as an important part of urban economy and urban feature development, cultural creative industry has greatly helped recent urban industry upgrade and urban space development.

1.3 Summary of Current Beijing Urban Cultural Space

By the time period, Beijing’s urban cultural resources can be divided into four categories. They are ancient time, modern time, contemporary time, and present-day time. By the characteristics of their content, they can be further divided into twelve sub-categories. They are religious culture, old city culture, royal culture, culture of Republic of China, folk culture, revolutionary culture, industry heritage culture, modern characteristic culture, populace leisure culture, culture and arts, Olympic culture, and culture and education. And they have different space vectors (Table 1).

Table 1 Summary of Current Beijing Urban Cultural Space

Time	Cultural Resources Types	Existing Artifacts	Locations
Ancient Time	Religious Culture	Religious sites Temples	The old city area The northwest part of city
	Ancient City Culture	Rampart ruins, Traditional allies And blocks	The old city area
	Royal Culture	Imperial Gardens Imperial tombs	The old city area The northwest part of city
Modern Time	Culture of Republic of China	Office buildings, former residences of celebrities, traditional brand shops	The old city area
	Folk Culture	Theaters Temple fair	The south part of old city
	Revolutionary Culture	Memorial places	The old city area The northwest part of city Lugou Bridge
Contemporary Time	Industrial Heritage Culture	Factory buildings Industrial areas	Chaoyang District Shijingshan District
	Modern Characteristic Culture	The Top Ten Construction of the 1950s Characteristic Streets	Changan Avenue Sanlihe Dongsi
Present-day Time	Populace Leisure Culture	Shopping streets Food streets Bar streets Leisure parks	Not concentrated. More in north and east than in south and west
	Contemporary culture And Arts	Art galleries Art academies Art districts	In centers
		Theaters, museums	Traditional theaters concentrate in Dashanlan

		district, Qianmen
Olympic Culture	Olympic stadiums, gyms, parks	Concentrate around Olympic park
Cultural Education	Universities	Haidian District

Cultural resources of different types from different time periods reflect different aspects of Beijing's urban cultural ideology. In general, historical cultural resources from the ancient and modern times are the most typical and representative urban cultural space of Beijing. They are also the unique characteristics of Beijing as a world-renowned ancient capital city. This kind of cultural resources should not only be kept in books and stories. They should be combined into today's city life. The artifacts can be properly utilized as long as strict protection measures are in place. The urban cultural resources artifacts after the modern civilization have more varieties. Many of them are still in use today, and they have certain effect on today's urban life. This kind of space should be valued in urban construction. The construction of cultural space will help realize urban cultural renaissance.

2. Analysis of Beijing's Current urban cultural space

*"World-famous cities are able to affect their nations' history because they can always represent their nations and their cultures, and pass on most of them down to their future generations."*⁸

Based on the study of the development and distribution of Beijing's urban cultural space during ancient, modern, contemporary, and present-day periods, this article will analyze Beijing's current urban cultural space in two areas: advantages and achievement, and problems and insufficiency.

2.1 Advantages and Achievement

2.1.1 Advantages in Resources

A glorious long history and splendid urban culture give Beijing very rich cultural resources. Combining the information from the lists of Cultural Relics Protection Units, Conservation Districts of Historic Sites, Historical and Cultural Cities, relics and protected residences in census registrations, as well as other sources of classification of historical and present-day cultural resources, Beijing's urban cultural resources can be summarize into three levels: sites, areas, and districts (Table 2). "Sites" are the cultural resources in the forms of single construction or historic relic, including historic cultural heritages, Cultural Relics Protection Units of all administrative levels, and outstanding historic constructions from modern and contemporary time periods. Contemporary and present-day urban cultural resources are cultural facilities of various types managed by all administrative levels. "Areas" are mainly historic culture conservation districts, underground cultural relics burial grounds, and cultural creative industry centers. "Districts" are whole old cities.

Table 2 classification and Current Situation of Beijing's Urban Cultural Resources

Levels	Categories	Artifacts
Sites	World Cultural Heritage	6 World Cultural Heritage: the Palace Museum, the Great Wall, Zhoukoudian Peking Man site, the Temple of Heave, the Summer Palace, the Ming Tombs
	Cultural Relics Protection Units of all	98 key national protected cultural relics, 357 municipal-level protected cultural relics

	administrative levels	
	Cultural facilities of various types managed by all administrative levels	89 commercial performance venues, 25 public libraries, 1 mass art hall, 317 cultural stations
	Others	Cultural relics in census registrations, protected residences, outstanding historic constructions from modern and contemporary time periods
Areas	Conservation districts of historic culture	There are 43 in total, 33 of them are inside the old city, and 10 are outside. The first group, 25 (declared in 1990) include South chizi Street, South Luogu Lane, etc. The second group, 15 (designated by “Beijing Historical and Cultural City Conservation Planning” in 2002) 5 of them are inside the old city, and 5 are outside. The third group, 3 (added in 2004) Xintaicang, Dongsinan, Nannaoshikou. Most construction control areas of conservation districts were also expanded.
	Underground cultural relics	36 underground cultural relics burial grounds,
	Cultural creative industry centers	30 Cultural industry centers
Districts	Historic cultural cities	Include the whole old city and historic cultural resources

2.1.2 Industrial and Personnel Advantages

As the nation’s political and cultural center, Beijing has good foundation for cultural creative industry and human resource advantage. There are 89 universities, 281 scientific research institutes, and nearly 700,000 research personnel⁹. Nationwide, Beijing has 42% of publishing houses, 35% of newspapers and periodicals, 60% of film and audiovisual industries, and 54.5% of TV show episodes production¹⁰. From 2001 to 2010, the added value of cultural industry in Beijing continued to growth, from ¥250,000,000 in 2001 to ¥2,070,000,000 in 2010, increased by more than seven times in 10 years. (Figure 4)

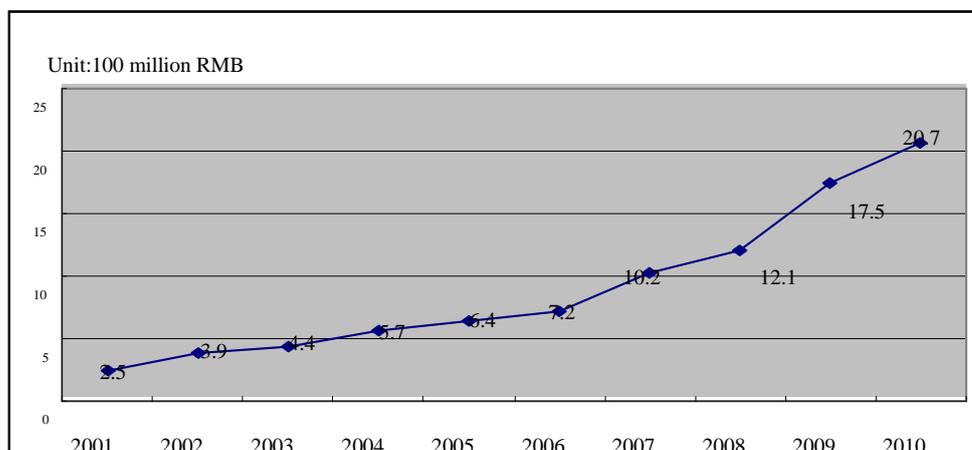


Figure 4 The added value of Beijing's cultural Industry 2001 -2010

Figure courtesy: <http://www.bjwh.gov.cn/>

Table 3 compares the development of cultural creative industry among Beijing, Shanghai and Shenzhen in 2010. Compared with Shanghai and Shenzhen, Beijing's added value of cultural industry and its percentage in regional GDP are the highest. According to the data from the National Bureau of Statistics, Beijing's total number and types of cultural creative industries, total transaction volume of cultural artifacts and artwork, total episodes of TV show production, total film production and office boxes all ranked first in the country. The employment in creative industry in Beijing is well above that of other interior provinces and cities. In many cultural creative industries such as professional and technical services, software, and press and publication, etc, Beijing has clear advantages over other regions, as shown in Figure 5.

Table 3 Comparison of cultural creative industry growth among Beijing, Shanghai, and Shenzhen

Economic indicator	Beijing	Shanghai	Shenzhen
Regional GDP (100 million yuan)	14113.6	17166.0	9581.5
Regional added value of the tertiary industry (100 million yuan)	10600.8	9833.5	5051.7
The percentage of the tertiary industry in regional GDP (%)	75.1	57.3	52.7
The added value of cultural creative industry (100 million yuan)	1697.7	973.6	637.23
The percentage of the added value of cultural creative industry in regional GDP (%)	12.0	5.7	6.7
The percentage of the added value of cultural industry in the tertiary industry (%)	16.0	9.9	12.6
The percentage of the added value of cultural industry over the previous year (%)	13.8	10.5	22.9

Data courtesy: sorted out from statistic yearbook of Beijing, Shanghai and Shenzhen

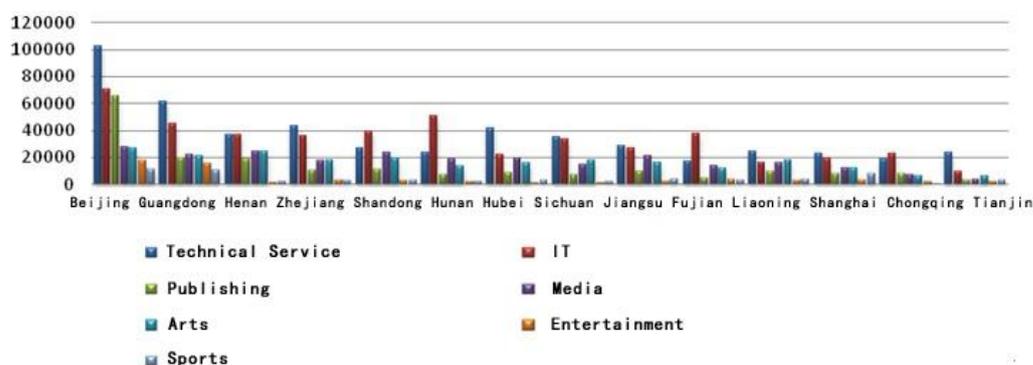


Figure 5 Employment in creative industries (partial) in some regions of China, 2009

Figure courtesy: Song Yang(2010) "The Special Structure of Beijing Creative Industry", Tsinghua University

2.1.3 Current Policy Advantages

In 2008, Beijing successfully hosted Olympic Games. The development of "Culture-enriched Olympics" and "Culture-enriched Beijing" achieved remarkable results. More and more efforts were put in conservation of historic cultural heritages¹¹. The average annual increase of the added value of cultural creative industry reached 20.3% and became a new highlight in economic social development. In the planning outline of "The twelfth 5-year plan", "Culture-enriched Beijing" is number one in development strategy. Currently, "Culture-enriched

Beijing” is the core content of Beijing’s urban development. In the chapter “The Charm of Cultural Highlight” of “The Twelfth Five-Year Plan Outline for Beijing National Economic and Social Development”, the author advocates “turn Beijing into a center of cultural innovation, operation, trade and experience with international influence”, and proposed “to integrate and upgrade 30 municipal-level cultural creative industry centers,to improve their cohesion and enhance their exemplary role, and to form a pattern supported by multi element and characteristic development.” The “Construction Plan for The Development of Culture-enriched Beijing during the Twelfth Five-Year Plan” released in August 2011 put forward an action plan for Beijing’s urban development from 2011 to 2015.

In December 2011, in order to carry out “CPC Central Committee’s Decision on Some Major Issues in Deepening the Reform of Cultural System to Promote Vigorous Development and Prosperity of Socialist Culture”, the municipal government issued “Beijing’s Proposal to Speed Up the Construction of a Capital City of Advanced Socialist Culture with Chinese Characteristics”, and articulated the development goal as “turning the capital city into a prestigious cultural center of national demonstration and promotion and international significance”, specified in eight aspects including “developed cultural creative industry”, “highlighted charm of urban culture”, and “enhanced cultural international influence”.

Clearly, culture is the most important strategy in Beijing’s current urban development. Beijing enjoys policy advantages in urban culture development and cultural space construction.

2.2 Problems and Insufficiency

2.2.1 Cultural Space Protection

Although the history and culture consecration system is increasingly improved, Beijing is still losing her cultural features. On the one hand, as the capital city of China, Beijing’s central areas are clustered with many municipal agencies of administration, culture, economy, traffic, sports, tour, etc. Most are in the old city area, causing damage to historic and cultural resources during decades of construction after the founding of the state, and putting tremendous pressure on conservation of old Beijing’s low-level and small-scale style. On the other hand, for many reasons such as historical, economic and traffic development, Beijing’s overall old city protection was not effectively implemented. Many historic and cultural resources are still being invaded (Figure 6). Some historic cultural space already in the list for protection are still being destroyed or “dismantled for maintenance”. (Figure 7)



Figure 6 FuWang Royal palace, the main building is now occupied by the Institute of History of Natural Science

Corresponding to the occupation and demolition of cultural space, there is a reconstruction fever for fake antiques and false relics. The transform of Qianmen Street is a typical example. While genuine relics were pulled down, fake ones were built up based only on photos before maintenance standards were issued. The products were some sight spots for tourism development in the name of consecration. The spirit of Beijing was lost in the process.

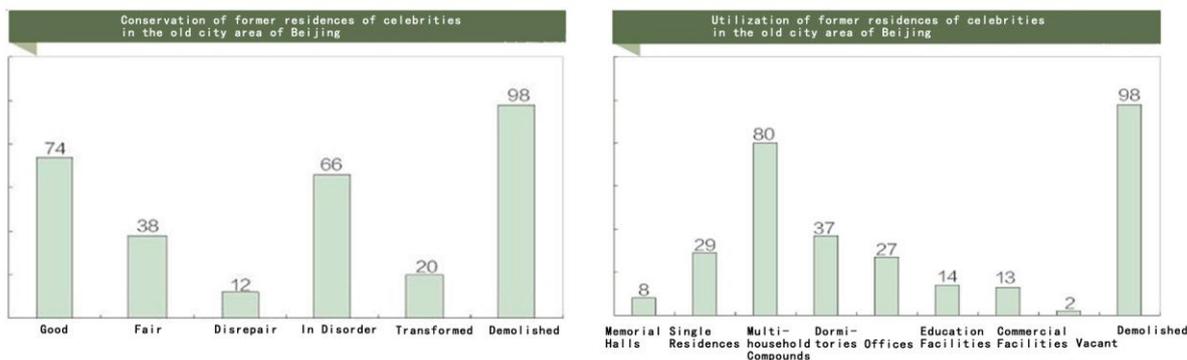


Figure 7 conservation and utilization of former residences of celebrities in the old city area of Beijing
Figure courtesy: the report of conservation and utilization of former residences of celebrities in the old city area of Beijing(2005)

“Genuine Relics” and “Fake Antiques”

Sixty years ago, Beijing’s gate towers and ramparts were torn down to reduce traffic jams.” Lin Huiyin predicted, “Today you are dismantle real antiques. One day you will regret and want to rebuild. But then you can only build fake antiques.”

Today, the fake antiques have become a common trend. Yongdin gate tower and former residences of celebrities have been rebuilt. Three turrets along Beijing’s center axis will be rebuilt in 2012 to restore the old city appearance. In September 2011, Premier Wen Jiabao warned. “Since the founding of the state, We should have learned a good lesson: dismantled the genuine and you build the fake. Great quantity of real heritage has been destroyed, and then lots of money is spent to build fake stuff.”

----“Southern Weekend”, 2/9/2012

2.2.2 Cultural Space Identification

While it is regretful to have genuine relics demolished, let’s not forget that historic landmark buildings are only a part of Beijing’s cultural space. Identification of cultural space should not limit to” former residences of celebrities” and “tangible cultural heritage”, or the 33 Conservation districts of historic culture. Apart from sites and districts of relics, ruins and conservations, there are great number of residential buildings inside Beijing’s old city area. They play a very important role in keeping the city’s historic style and overall urban characteristics. Apart from conventional “historic culture” and “industrial heritage”, there are other types of urban space with special cultural value as well, waiting to be recognized and explored. Take the example of Baiwanzhuang Subdistrict. It was known as “the No. 1 residential district of the new capital” in the 1950s. But its cultural value is known only to a few experts (Figure 8). In 2011, Baiwanzhuang Subdistrict was declared as dilapidate and faced demolition.

Baiwanzhuang Subdistrict

The subdistrict, designed by master architect Zhang Kaiji, is a combination of Chinese and Russian Styles. The construction started in 1953 in the then west suburb of Beijing and completed in 1956. With buildings of red brick walls and sloping roofs, large green areas and playgrounds, quiet surroundings and even distance for sunlight, It became a model for residential area construction for decades.

---- Beijing Daily 8/27/2011

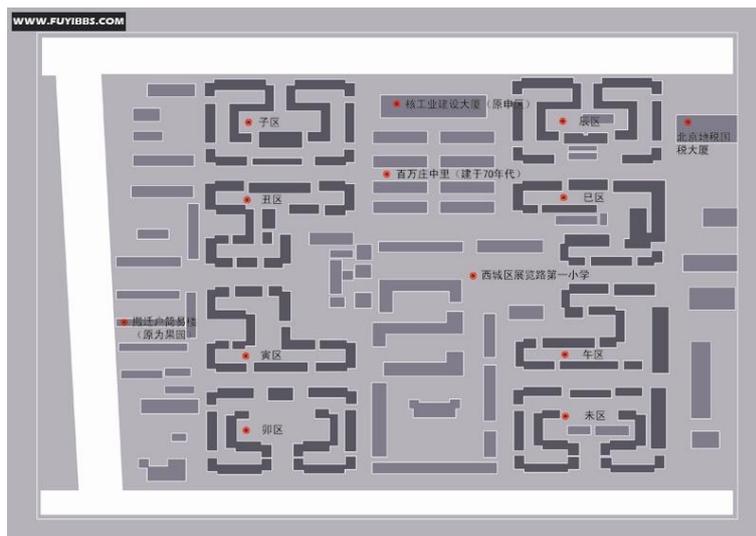


Figure 8 Floor map of Baiwanzhuang subdistrict of Beijing

Figure courtesy: <http://www.fuyibbs.com/viewthread.php?tid=44658>

2.2.3 Application of Cultural Space

Since 1980, “reconstruction of old and dilapidated buildings” has played a big role in the destruction of Beijing’s old city and cultural space is. In practice, most areas in the old city are overcrowded and the housing conditions are worrisome. It cannot fully reflect Beijing’s true features and living conditions, nor can it really be a stimulus or economic resource in urban development. The grimmest issue facing Beijing’s urban cultural space development is how to effectively utilize various cultural resources, including historic cultural resources, and adapt their rich connotation and ideology to current urban life.

While a great part of cultural space is not fully utilized, some other part is overused. Take South Luogu Lane for example, after “Jiaodaokou Street Community Development plan (2006-2020)” and “South Luogu Lane Protection and Development Plan (2006-2020)” were drawn in 2006, the focus of the plans shifted to promoting and guiding industrial development in South Luogu Lane area. A developmental pattern was introduced to use cultural creative industry to finance commerce. Since then, South Luogu Lane has gradually become one of the best-known characteristic historical streets. While the volume of its visitors continues to increase, the commercial form in South Luogu Lane has gradually transformed from a popular market of creative products to a shopping area of specialty stores and expensive galleries and bars. This kind of “cultural space” has become the nickname of consumption and fashion. The ideology of cultural space is replaced by the “cultural symbol” of the new age.

3. Conclusion

Besides history and literature, Current urban culture should also have spaces as its vectors. Spaces that embody Beijing’s urban culture can be acknowledged as Beijing’s urban cultural spaces. They collectively reflect Beijing’s history, society and characteristics. These spaces should be protected and properly utilized in the process of urban development.

As a city of rich cultural resources, Beijing is facing a double challenge of cultural space protection and construction. With analysis of Beijing’s current urban cultural space, this article concludes that the construction of urban cultural space should start from the reality of current urban lives, and base on appropriate protection, recognition and utilization, and

create opportunities for cultural innovation with cultural resources. As to the goal of protecting Beijing's historic cultural resources, emphasis should be placed on a shift from protection to exploration for their inner value, and proper ways of their renewal and reuse. For thousands of years, historic heritage and rich culture from different ages made up Beijing's cultural resources with great potential for conservation and development. Integration and utilization of these resources will promote the formation and development of Beijing's cultural areas and realize the development goal of "Culture-enriched Beijing".

Endnotes

- 1 Michael E. Porter(1998) " Clusters and the New Economics of Competition", Harvard Business Review , Vol.76 No.6
- 2 <http://chinaup.info/2011/12/3186.html>
- 3 Liangyong Wu's speech to remember Sicheng Liang, Quote from Jun Wang(2008) Cities as Recorded by a Journalist, Beijing: SDX Joint Publishing Company
- 4 Sicheng Liang(1951)"Beijing—the masterpiece of city planning", New Observer ,No.4
- 5,6 He Huang(2009) "A Review of Culture develop in Beijing's urban construction ",Beijing Planning Review, No.5
- 7 Qiaofang Tian(2008) " the Develop Pattern of Beijing Creative Industry ", China Dizhi University
- 8 Said Lewis Mumford, Quote from Liangyong Wu(2005) "Research of Beijing old city protection", Beijing Planning Review, No.1
- 9 Data courtesy: Beijing statistic yearbook 2011
- 10 Research Center for Cultural Policy of CASS (2005) The Analyze of Beijing Cultural Industry's Current Situation
- 11 <http://zhengwu.beijing.gov.cn/ghxx/sewgh/t1199478.htm>

References:

- Jun Wang(2003) Beijing Record: A Physical and Political History of Planning Modern Beijing, Beijing: SDX Joint Publishing Company
- Jun Wang(2008) Cities as Recorded by a Journalist, Beijing: SDX Joint Publishing Company
- Liangyong Wu(1993) The Old City Of Beijing And Its Ju'er Hutong Neighborhood. Beijing: China Architecture & Building Press, 1994.
- Wenyi Zhu(1993), Space, Symbol and City: A Theory of Urban Design, Beijing: China Building Industry Press
- Wenyi Zhu(2007) "Religious Space in North Beijing", Beijing Planning Review, No.5

Renewal Agenda in Istanbul: Urbanisation vs. Urbicide

Zeynep GUNAY, Istanbul Technical University, Turkey

1. Introduction

Urban renewal is among the priorities of urban agenda in Istanbul considering the large amount of squatter areas, disaster-vulnerable existing building stock, and historic building stock due to half a century long uncontrolled rapid urbanisation. Eventhough urban renewal is not a new phenomenon in Turkey, 1999 Marmara Earthquakes have played a major role in the rising awareness on the importance of quality of building stock rather than the quantity, as a way to resolve the urbanisation perception by focusing on what already exists and by legitimising urban renewal. On one hand, new laws and regulations have followed the earthquakes to determine the legal and institutional framework of urban renewal. On the other hand, the private sector has valorised this process through the large-scale property-led renewal schemes in the transformation of squatter areas, historic inner-city neighbourhoods, waterfronts, industrial areas, public spaces and natural protection zones into the giant construction zones of economic rant and land speculation. Infact, the paper claims that the large-scale property-led renewal schemes, which have been employed as an evolving model in resolving the urbanisation problem, are turned into the instruments of “urbicide” in Istanbul as a political “evolving” model of urban destruction. The same process has resulted in the declining of participatory, transparent and sustainable approaches of urban planning. The concerns arising out of this change of emphasis encompass conflicts between comprehensive planning and project-based fragmented interventions, process and action, common interests and private interests, authenticity / diversity and standardization, users and owners. Within this scope, by constructing an urban renewal framework through the exploration of Law on the Protection and the Revitalisation of Deteriorated Historical and Cultural Immovable Assets (2005) and Law on the Transformation of Areas under Disaster Risk (2012), the paper intends to discuss the evolving and declining urbanisation patterns in Istanbul by relating them with up-to-date political, economic, technological and socio-economic inferences. Considerable emphasis is placed on the use of examples to illustrate and critically analyze meanings, inputs, outputs and impacts. The paper concludes by addressing in what ways the planning as a profession can manage these evolving and declining models in resolving contradictions stemming from the dichotomy of urbanisation and urbicide in Istanbul.

2. Rationale for Urban Renewal

Urban renewal is not a new phenomenon in Istanbul, but it is still among the priorities of urban agenda as an action to cope with the haphazard urbanization patterns and large amounts of squatters due to the uncontrolled rapid urbanization since the 1950s, large amounts of disaster-vulnerable existing building stock due to lack of administrative control over construction and building construction technology, and large amounts of historic building stock in need of careful conservation, rehabilitation and continuous maintenance. As outlined in Gunay et al (forthcoming), the building stock in Istanbul is quite young with a percentage of 66 built after 1980; but the building condition analysis based on the last building count of Turkey in 2000 (TUIK, 2000, p. 454) shows that most of the buildings constructed before the 2000s should either be demolished or consolidated. While nearly 60% of the total building stock can be termed unauthorized, the challenges on the urban landscape are coupled with

the deterioration of physical fabric due to aging or poor maintenance; mismatch between contemporary needs and existing functions; changing perceptions and value judgements on the image of buildings or settlements. The overcrowding and gradual shift in the profile of the inhabitants caused by rural-to-urban migration are also effective in urban deprivation. In addition to the quality of building stock and profile of inhabitants, there is an immense market pressure for transformation in the most economically and culturally valuable zones including the waterfronts, old industrial areas, historic neighbourhoods, public spaces and natural protection zones. Inefficient urban management together with the official obsolescence in providing strategic, flexible, responsive and participatory planning instruments, methodologies and organization forms prevents central and local governments to deal effectively with the problems. These rationales make apparent that there is an urgent need for comprehensive and integrated vision and action to resolve the problems associated with fuzzy urbanisation in Istanbul.

3. Responding to the Rationale: Evolution of Renewal Agenda

Regarding these rationales, urban renewal has always been among the priorities of urban agenda in Turkey. A detailed conceptualisation for the evolution of urban renewal in Turkey with reference to mainstream politics can be found in Gunay et al. (forthcoming) and Ataov and Osmay (2007). Before the 1950s, urban renewal was an intervention on its own record rather than a governmental initiative mainly because of fires. After the 1950s, urban renewal was a strategy for the clearance of deprived areas for the opening of new transportation arteries or recovering the silhouette effect of major monuments; and a strategy that helped the transformation of urban landscape by apartment blocks under the name of “modernity project”. Coming to the 1960s, it was conducted via demolition-based activities in squatter areas, which were once encouraged because of their self-help housing character for the shortage of public funds to accommodate the new inhabitants. The globalization and liberalization project of the 1980s again resulted in the increasing focus on new constructions rather than investments in the existing building stock especially through the enactment of Mass Housing Law in 1984 (Law No. 2985, 18344/02.03.1984).

In the 2000s, urban renewal has become the base of urbanisation politics and planning agenda via a growing tendency on neoliberal urbanisation politics based on project-based interventions and public-private partnerships. According to Bartu-Candan and Kulluoglu (2008, p.9), neoliberalism have also paved the way for the social and spatial segregation of the emerging groups of poverty and wealth in urban spaces, or the emergence of the so-called spaces of decay, distressed areas, and privileged spaces. While the institutional and legal regulations had followed the renewal practices before the 2000s (Ataov and Osmay, 2007); one of the most important attempt in this period was the employment of urban renewal – together with large-scale property-led renewal schemes- in the legal and institutional base. According to Tekeli (2011), one of the differences between the former periods and the 2000s is the fact that urban renewal is started to be conducted by the powerful stakeholders, namely the government itself comparative to the unpowerful actors of the former periods such as contractors or squatter dwellers. 1999 Marmara Earthquakes have played a major role in the rising awareness on the importance of quality of building stock rather than the quantity, as a way to resolve the urbanisation perception by focusing on what already exists. However it has also given political “legitimacy” to urban renewal interventions. While there has been a rise of focus on more participatory and inclusive approaches in planning and renewal through the empowerment of local governments as a result of Local Agenda 21 of the UN Habitat Conference held in Istanbul in 1996, the period starting from the election of the Justice and Development Party in 2002 has provided a return to more centralised even over-centralised institutional forms and planning practices.

Between 2002 and 2012 major attempts were being made to prepare the legal format for the employment of neoliberal urban politics including the alteration of Mass Housing Law (Law no. 5162) in 2004; the authorization of Mass Housing Authority (TOKI) to realize, prepare and alter all kinds and scales of development plans in areas determined as the mass housing settlement regions; and enactment of Municipality Law (Law no. 5393) in 2005) to give the municipalities the right of determining renewal process in their own. Considering the empowerment of greater municipalities with respect to centralised governance structures, the share of Greater Municipalities in State and local municipality tax budget has risen respectively from 2.50% to 4.4% and from 5% to 6% in 2008 – while there seen a decrease from 2.85% to 1.40% in local municipality tax shares in municipalities and from %30 to %20 in greater municipalities. On the other hand, the budget of Greater Municipality of Istanbul has risen to €3.5 billion in 2013, while €720 million was allocated to Ministry of Culture and Tourism (1.9%). In 2011, the Ministry of Environment and Urbanism was opened replacing the Ministry of Public Works and Settlements. Erdogan Bayraktar, the former head of TOKI, was ironically promoted as the Minister.

Regarding the evolution of urban renewal policies and practices, it can be stated that each period had used a different package of planning tools in the utilisation of urban renewal; however all of them have focused on market conditions and spontaneous solutions of community (Ataov and Osmay, 2007). Despite different conceptualizations that are being used interchangeably with revitalization, regeneration or transformation, urban renewal has always been associated with physical interventions and destructions; and it has covered the radical transformation interventions that demolishes the old for reconstruction (Tekeli, 2011). On the other hand, the socio-economic aspects of renewal interventions have always been ignored.

4. Large-Scale Area-Based Urban Renewal Framework: The Solution?

There are two fundamental laws defining the legal base of large-scale property-led renewal schemes in Turkey: “Law on the Protection and the Revitalisation of Deteriorated Historical and Cultural Immovable Assets” (Law No.5366, 05.07.2005) and “Law on the Transformation of Areas under Disaster Risk” (Law No.6306, 31.05.2012).

4.1 Law on the Protection and the Revitalisation of Deteriorated Historical and Cultural Immovable Assets

This law propounds renewal sites in order to consolidate the urban structure for earthquake risk mitigation, and regenerate especially the deprived neighbourhoods of historic city centres through the utilisation of mixed-uses. Renewal zone decision is taken by Municipal Assemblies in the settlements having municipalities, and by General Assembly of Provinces in the settlements outside governed by Special Administration of Provinces outside municipal boundaries. The Board of Ministers approve the renewal zone decision. The scale of intervention starts from 5000 square metres. Key implementation instrument is urgent expropriation to overcome postpone; although it can only be utilised in national security/defence issues according to the Expropriation Law (Law no. 2942). There are different implementation and financing authorities and actors; however the projects are generally managed by a public-oriented implementation model. The responsibilities in planning and conservation are shared between Greater Municipalities and local municipalities at local level, and Supreme Board for the Protection of Cultural and Natural Assets under the Ministry of Culture and Tourism at national level. The Law also propounds the establishment of “Boards of Renewal” authorised to approve the renewal projects. This regularisation bypasses “Boards of Protection” which were responsible in the control of conservation status of historic neighbourhoods since the enactment of the Law on the Protection of Cultural and Natural Assets in 1983 (Law no. 2863). TOKI is contradictorily the

most powerful institution in the implementation of the law along with the corporations of municipalities such as KIPTAS - housing agency, KUDEB - Control Bureau for the Conservation of Cultural Assets, and other relevant private sector architecture and construction firms. The owners of historic buildings, which are not demolished, are obliged to carry out their own conservation projects under the assistance of KUDEB, otherwise they are given housing in one of the mass housing areas constructed by TOKI at the periphery of the city. In the latter case, the financial model is based on monthly instalments of long-term credits. It is also possible to transfer funds from the Fund for the Protection of Immovable Cultural Assets to the municipality budgets. However, the implementation and financial models ignores tenants.

4.2 Law on the Transformation of Areas under Disaster Risk

Having issued by the slogan of “making slums history”, this Law covers the areas which could not be covered through the previously mentioned law. By focusing on demolition and reconstruction through the authority of Ministry of Environment and Urbanism, the Law is far from solving the quality problem in housing provision, but rather raises serious debates on environmental and social consequences including the transformation of conservation sites, agriculture and forest areas into reserved housing zones for construction, the demolition of even steady housing stock and the displacement of inhabitants (Gunay et al. forthcoming). It brings forward a definition for risk areas to be transformed as “buildings within or outside risk areas that have completed their economic life, or which are scientifically and technically proven to be at risk of demolition or high damage”. By bringing all authorities that are responsible for planning, development and control under one institution, the Ministry of Environment and Urbanism. Through this newly attained responsibility, the Ministry is authorized to expropriate the immovable or exchange them with others; to transfer immovable property rights and zoning rights to other areas; to divide and to allocate shares forming the immovables; and to establish rights; which means “everything”. The minimum size of transformation areas is 50.000 square metres. According to Law, majority decision of share holders (2/3) is enough for the application for renewal, disregarding the decision of all. A licensed institution by the Ministry is authorised to conduct research to detect whether or not their building is at risk. The licensing of the institutions through the Ministry creates a threat over independency that the majority of the licensed institutions are also the construction firms who will be responsible for the renewal projects. The Law calls for temporary housing or workplace and rent benefits for shareholders, however it is not certain when and where these housing and workplaces will be given. Seen from the current practices that it is a high possibility that these places will be at the periphery of cities. It also launches the renewal fund which will be generated from administrative fines collected under the Environment Law, income from the properties sold under the Forestry Law, and a certain amount of the annual net profit of the Provincial Bank. There is interest rate support to banks, rental support, demolition credit, ministerial construction credit and credit for detection. The regulations also provides opportunities for the transfer of development rights. One of the most important threats through the law is the definition of reserve zones for new settlement, which are not clearly defined and can be and possibly will be applied to natural protection zones and forests.

5. What Does Renewal Meant for the Opportunity Spaces of Istanbul?

5.1 “Making invasion history”

The Law No. 5366 has introduced a major challenge for the **historic landscapes** of Istanbul. 11 historic zones in Istanbul’s Beyoglu, Fatih (in Historic Peninsula), Eyup, Zeytinburnu and Tuzla districts were declared as “renewal sites” between 2006 and 2010. These include 6 historic neighbourhoods in Beyoglu conservation site (such as Tarlabasi, Cezayir Çıkmazi, Tophane, Galata Tower, Municipality Building and environs); and 47 historic neighbourhoods

in the Historic Peninsula (such as Ayvansaray, Sulukule, Suleymaniye, Yenikapı-Yali, Sultanahmet, Kucuk Ayasofya, Grand Bazaar and environs) mostly with urgent expropriation decisions. The buffer zone for the Land Walls World Heritage Site is included in Zeytinburnu renewal area. There is a variety of interventions that are designed both to renovate and upgrade existing older housing and to build new housing through the complete demolition of obsolescent properties. The projects have been based on the theory that the conservation of cultural heritage through the elimination of “invasion” would increase the sense of belonging where different social groups live together; the prevention of decay through the eviction of social elements who do not invest in the maintenance of these; the protection of cultural dynamics and increase social integration with the rest of the city; and the establishment of a participatory process through public meetings (see Gunay, 2011). Regarding the Law No. 5366, the large-scale renewal projects have provided serious discussions on the sustainability of historic environment. Regarding their world heritage sites status, they are threatened to be included in the World Heritage List in Danger due to the lack of effective conservation or overuse of renewal policies and practices (UNESCO/WHC, 2010). Moreover, the projects are criticised as projects of “gentrification” and recommended that a balance must be found between conservation, social needs and identity of the community (UNESCO/WHC, 2008). For instance in Suleymaniye, KIPTAS has bought 101 buildings, most of which were demolished to perform restoration project by 2011. Sulukule and Ayvansaray were nearly totally demolished under the name of protecting the historical identity and improving the building stock which are not safe for earthquake by 2012 (Gunay, 2011). Tarlabasi project consisted of the renewal of 278 buildings, 76% of which were registered (for more information, see Kuyucu and Unsal, 2010). As a results of the renewal projects in historic neighbourhoods, which are described as “source of shame or dirt bag”, nearly 50% of properties has changed ownerships after the destruction decisions and urgent expropriations. Only in Sulukule this meant the replacement of 5000 families (see Gunay, 2012a).

5.2 “Making slums history”

Squatter areas, on the other hand, have always been one of the most important priorities of renewal framework in Turkey since the 1960s. Once they were encouraged as a way of self-help housing in a country of limited financial resources at the edge of industrialisation; after the 2000s, they started to be identified as “invaders” as they provided a boundary for the utilisation of opportunity spaces of Istanbul. One of the first renewal interventions were conducted in Ayazma, a squatter neighbourhood found in the 1980s. The neighbourhood was totally demolished in 2009 because of its increasing land values through the construction of important highways, industrial areas and Olympic Stadium. While the owners were offered dwellings in TOKI’s Bezirganbahçe Mass Housing Area at the periphery, the land emptied from low-income residents and squatters were filled with high-rise upper-income gated sites (see Bartu-Candan and Kolluoglu, 2008). Finally regularised urban renewal based on the Law on the Transformation of Areas under Disaster Risk has started in October 2012 through a live screening in the media. Based on the slogan of “making slums history”, the Prime Minister Recep Tayyip Erdogan pushed the button of bomb to start the demolition of 6.5 million building in Turkey (40% of building stock). 35 cities were selected primarily defining the largest renewal project in Turkish history. Only in Istanbul this means the demolition of approximately 1 million buildings. The neighbourhoods of Sumer, Esenler, Maltepe, Bayrampasa, Fikirtepe, and Derbent are among the first project areas to be chosen for renewal with respect to their strategic locations. The private sector has valorised this process of transforming squatter areas and inner-city neighbourhoods into the urban spaces of economic rant and land speculation under the name of “resource development and revenue-sharing projects” (see Gunay, 2012b). While these projects are being encouraged in order to raise financial resources in order to be used in housing projects for lower and middle income groups, the practices show that a considerable portion of the newly constructed buildings by TOKI are sold in the market to upper-income groups. For instance in Derbent neighbourhood, which is along the main financial axis of Istanbul with a

view of Bosphorus strait, the dwellings of gated sites are being sold for a minimum of €435.000. While the project proposes a population of 10.000 replacing the actual population of 7000, only 1000 buildings will be reserved for shareholders. On the other hand, the inhabitants of the 800 squatters will be given housing in the reserved zones for construction at the periphery.

6. Dichotomy of Urbanisation and Urbicide in the Renewal Agenda of Istanbul

The large-scale property-led renewal schemes, which have been employed as an evolving model in resolving the urbanisation problem, are turned into the instruments of “urbicide” in Istanbul as a political “evolving” model of urban destruction.

The current so-called planning practices offer an economic-oriented approach, which results in the interruption of planning process via the prominence of concepts such as “revitalisation”, “transformation”, “renewal” projects. Planning’s intervening and controlling role in entrepreneurial practices undergoes a change via neoliberal policies, thus, private sector-oriented partial projects replace comprehensive planning approaches. Within this process, planners and architects, who are the actors of the planning become agencies led by the private sector. In addition, the basic fundamental of the profession, which is the “public interest”, is replaced by an understanding of “corporate income”. Public authority and public resources are being used not to provide affordable and high-quality urban environments to the lower-income groups, but to open up profitable investment areas either for the state or for certain private developers.

While planning, as a participatory, transparent and sustainable approach, is a declining model of practice in Turkey, there is an emergence of uncontrolled power in the governance of the built environment bypassing planning. Over-centralised structure of urban renewal interventions prevents the dynamics of local governance and limits transparency of process through the elimination of independent control mechanisms through the empowerment of new actors. Ministry of Environment and Urbanism and TOKI have been authorised as real-estate agents, and has turned it into a “dangerously powerful institution directly at the service of the executive branch of the government” (Kuyucu and Unsal, 2010).

Urban renewal interventions, associated with physical interventions and destructions, focus on market conditions and spontaneous solutions of community, while the socio-economic aspects are being ignored. Urban renewal projects lead to the separation of community according to their socio-economic classes, ethnic backgrounds and cultural choices. Urban renewal interventions transforms inner-city into opportunity spaces resulting in the exclusion and eviction of the low-income local community, while destroying the collective memories. They also result in the displacing and replacing of new forms of poverty (Bartu-Candan and Kulluoglu, 2008). The Advisory Group on Forced Evictions (AGFE, 2009) estimates that the number of people that are under the threat of involuntary eviction is approximately one million, most of whom are currently the residents of historic neighbourhoods. In addition, the focus on physical renewal provides serious environmental consequences to the transformation of conservation sites, agriculture and forest areas into reserved zones for new settlement construction.

These remarks show that urban renewal practices in Turkey was proved to be a state-driven destruction and real-estate marketing strategy, rather than being a strategy to respond to historic preservation, disaster risk or urban deprivation. Apart from the mentioned legal frameworks, there are even new schemes being drafted by the government to regularise the process of urban renewal, through a more centralised structure to prevent the participation and to limit the control mechanisms of local municipalities, independent boards of

professions, non-governmental organisations and the community. Renewal projects is not limited only to historic landscapes and squatter areas; the waterfronts, old industrial areas and even public spaces are subject to large-scale urban renewal projects as the new opportunity spaces of Istanbul. Istanbul, as a city of water, has been facing the most challenging threats of its waterfronts through the projects such as Haydarpaşaport, Galataport and Halic port. The public spaces including the Gezi Park that has become subject to the most powerful community action starting from May 2013, has been projected to be replaced by a mall complex together with others as Camlica Hill. While the mega projects such as 3rd Bridge, Canal Istanbul and Olympic Village are threatening the natural protection zones of the city, there seen no hesitation to destroy Yenikapi archaeological excavations of 8000 year-old history in order to construct transfer hubs.

Thus, there is an urgent need for change of emphasis in the governmental perception and political culture to employ holistic urban renewal framework through empowering sustainable, participatory, transparent and strategic planning approaches; raising consciousness into the role of community, community organisations and local governance; encouraging reinvestment and improvement rather than demolition; and most importantly preserving and respecting the country's cultural and environmental inheritance. Within the scope of this emerging agenda, there is still a role for planning and planners in managing these evolving and declining models of practice. One of the most important factors is that the "rational" planning approach has no validity anymore; the planning has to be responsive to strategic, flexible, responsive and participatory approaches as an intermediary between all stakeholders including the public and private sector as well as the community. Planning system should be open to change, if it wants to manage change. The planning profession may and should not have the power to change the ongoing political inferences on cities itself, however it may be a powerful instrument to construct the democratic management framework for cities and communities by creating the conditions of coordination, cooperation and negotiation. Because as Newman and Thornley (2002, pp. 23) puts forward the planning lies at the interface of market and politics in the neoliberal era. This is a shift from being the agents of development control towards being the agents of strategic-thinking.

References

- Ataov, A., Osmay, S. (2007) "Türkiye'de kentsel donusume yontemsel bir yaklasim" [A methodological approach to urban regeneration in Turkey], METU Journal of Faculty of Architecture, vol. 24, no. 2, pp. 57-82.
- Bartu-Candan, A., Kolluođlu, B. (2008) "Emerging spaces of neoliberalism: A gated town and a public housing project in Istanbul", New Perspectives on Turkey, vol. 39, pp.5-46.
- Gunay, Z. (2011) "Dichotomy of change in historic environment: Lessons from Istanbul", Proceedings of the IAPS International Network Symposium: Continuity and Change of Built Environments, Housing, Culture and Space Across Lifespans, Daegu.
- Gunay, Z. (2012a) "Historic landscapes of exclusion in Istanbul: Right to the city?", Proceedings of the 15th International Planning History Society Conference: Cities, Nations and Regions in Planning History, Sao Paulo.
- Gunay, Z. (2012b) "Mind the Fakes! Fast forward heritageisation in housing projects of Istanbul", Proceedings of the 48th ISoCaRP Congress: Fast Forward: Planning in a (Hyper) Dynamic Urban Context, Perm.
- Gunay, Z., Koramaz, T.K., Ozuekren, A.S. (forthcoming) "From squatter upgrading to large-scale renewal programmes: Housing renewal in Turkey", in: R. Turkington, C. Watson (eds) *Renewing Older Housing: A European Perspective*, Bristol: Policy Press.

Kuyucu, T., Unsal, O. (2010) "Urban transformation as state-led property transfer: an analysis of two cases of urban renewal in Istanbul", *Urban Studies*, vol. 47, no. 7, pp.1479-1499.

Newman, P., Thornley, A. (2002) "Globalisation, world cities and urban planning: Developing a conceptual framework", in: A.Thornley, Y. Rydin (eds) *Planning in a Global Era*, pp. 13-27, Aldershot : Ashgate.

Tekeli, I. (2011) *Kent, Kentli Hakları, Kentleşme ve Kentsel Dönüşüm [City, Citizen Rights, Urbanisation and Urban Transformation]*, Istanbul: Tarih Vakfı.

TUIK (2000) *Population Census - Building Count 2000*.

UNESCO WHC, 2008, "State of conservation of World Heritage properties", 32nd Session of the World Heritage Committee, WHC-08/32COM 7B.Add.2, Quebec, 21-25.

UNESCO WHC, 2010, "Decisions Adopted at the 34th Session of the World Heritage Committee, State of Conservation (Historic Areas of Istanbul)", Decision WHC-10/34COM 7B.102, Brazilia, 188-156.

South West Victoria 2012 – 2050 Are the Settlements Sustainable?

J. M. Herron, D. Jones, J. Rollo, Deakin University, Williamstown, Australia

Over the past few decades coastal cities around the world have grown at an incredible rate. With this growth have come major challenges relating to land use planning, social relationships, economic development, bio diversity and the ecological footprint.

The following paper selects three regional coastal towns (Warrnambool, Portland and Port Fairy) situated in the Australian state of Victoria, and addresses the issues of: increasing population and population density; open space requirements; residential density issues; public transport coverage; employment and employment density; a shifting economic climate; environment and climate change; water quality issues and building energy consumption with subsequent CO₂ emissions.

Through a series of simulations the nine issues for each of the three cities will be examined from 2012 through to 2030.

The goal is to highlight the current and simulated future impacts of the selected issues and propose solutions that could mitigate those impacts.

1 Introduction to the Study Area

The study area for this research is represented by the cities of Warrnambool, Port Fairy and Portland and surrounding area in South West Victoria. Warrnambool is approximately 300 kilometres west of Melbourne; Port Fairy is 25 Kilometres from Warrnambool while Portland is located 100 kilometres west of Warrnambool.

Warrnambool was first incorporated as a municipality in 1855 and is the largest settlement in South West Victoria with a population of 32,000. Warrnambool is the administrative, educational and commercial centre for South West Victoria.

Port Fairy can be traced back to 1810. Port Fairy is the largest settlement in Moyne Shire with a population of 2,800. Port Fairy, is the administrative and commercial centre for Moyne Shire. The bulk of the commercial activity is focused on municipal government and tourism activities.

Portland is the oldest European settlement in Victoria with the first settlers appearing between 1815 and 1820 and is the major residential and commercial centre for Glenelg Shire with an approximate population of 10,000. Warrnambool, Port Fairy and Portland with their locations respective to the rest of Victoria are shown in Figure 1.

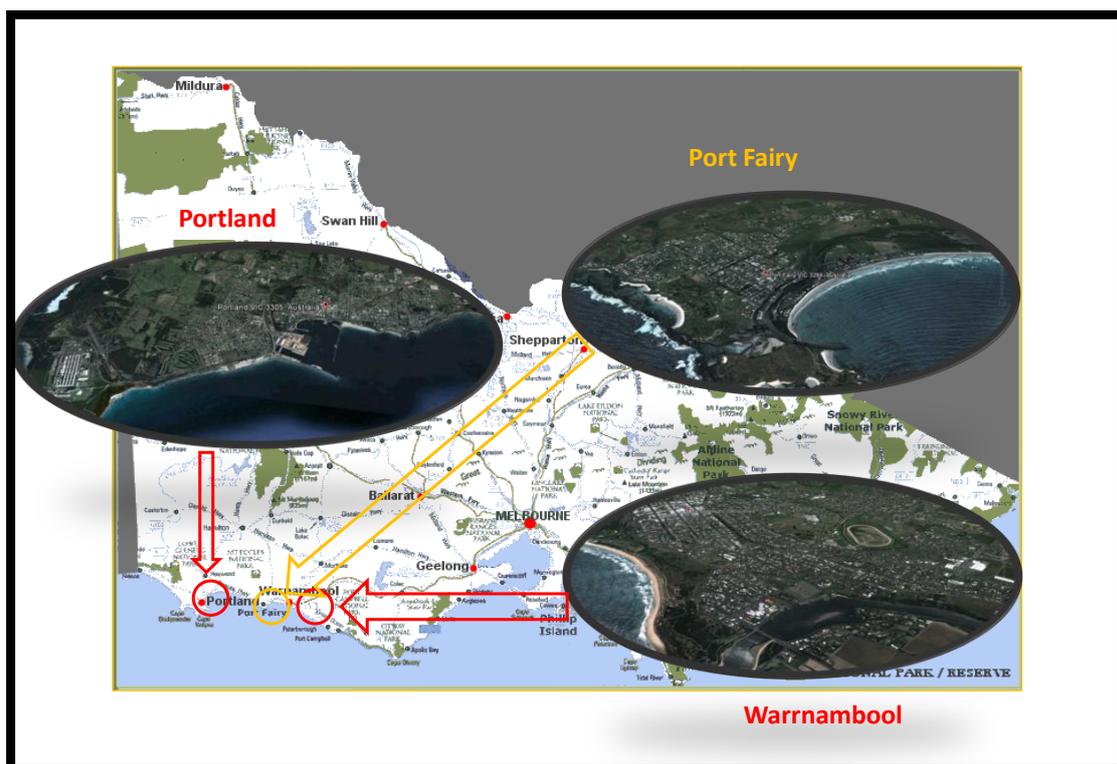


Figure 1 Greater Study Area Including the Cities of Warrnambool, Portland and Port Fairy

Source:(Goggle 2013; Herron Murray 2013)

Throughout their entire existence Warrnambool, Portland and Port Fairy have been major ports for South West Victoria and South Australia. The port facilities for the three cities are an integral part of each city and provide a direct input into whether or not each of the three

cities can continue as a sustainable settlement. Warrnambool, Portland and Port Fairy in the last two years have outlined plans to redevelop either their respective port facilities or Central Business District (CBD) area. This paper will examine the current urban design frameworks for Warrnambool, Portland and Port Fairy and through the use of scenarios assess the sustainability of each settlement.

“Urban Design is the art of making places for people. It includes the way places work and matters such as community safety, as well as how they look. It concerns the connections between people and places, movement and urban form, nature and the built fabric, and the processes for ensuring successful villages, towns and cities” (Strzelecka 2010)

Urban Design has eight objectives:

1. Character - A place with its own identity
2. Continuity and enclosure – A place where public and private spaces are clearly distinguished
3. Quality of the public realm – A place with attractive and successful outdoor area
4. Ease of movement – A place that is easy to get to and move through
5. Legibility - A place that has a clear image and is easy to understand
6. Adaptability – A place that can change easily
7. Diversity - A place with variety and choice
8. Sustainability- A place that meets the needs of today without comprising the future

The structural components of an Urban Design Framework are shown in Figure 2. This type of framework was used to influence and direct the current and future design characteristics and features of Warrnambool, Portland and Port Fairy.

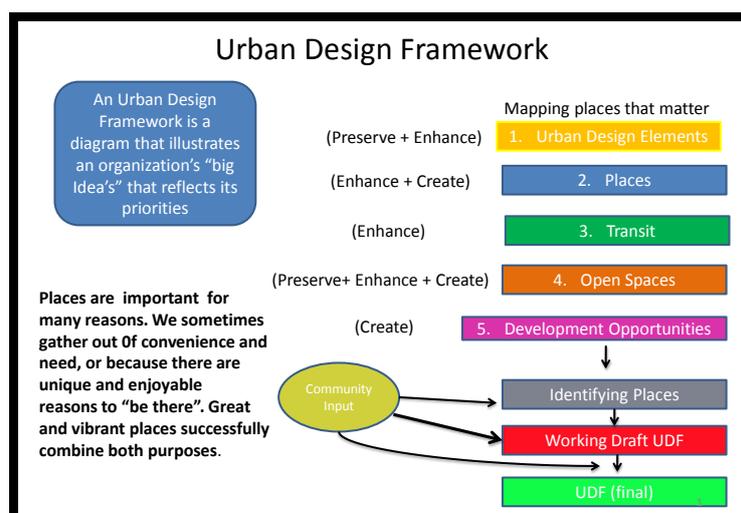


Figure 2 Urban Design Framework

Source:(Herron 2012)

1.1 Warrnambool

Warrnambool urban design framework focuses on five themes:

- i. City spaces and landscape
- ii. Pedestrians and accessibility
- iii. Cars and parking
- iv. Land use and activities
- v. Built form and heritage

The themes have a series of objectives including:

1. Ensuring that the Warrnambool City Centre continues to be the primary retail and services centre
2. Encouraging a diversity of new investments in the City Centre, encompassing retail, commercial, entertainment, recreation, community, cultural and residential services and facilities;
3. Supporting the development of medium density residential development within walking distance of the City Centre;

Source:(City of Warrnambool 2011)

The urban design framework drew attention to the lack of land that could be used for development and to water and energy conservation measures that improve Warrnambool's sustainability.

1.2 Port Fairy

The town of Port Fairy has been transformed over the last decade or so from a local service centre and fishing port with a tourist and recreation profile to an iconic high profile tourist and resident destination.

That transformation has partly been driven by some forces internal to the town but it has largely been imposed by external trends and factors which have impacted on many coastal communities.

There is an emerging concern about aspects of the town's future. These concerns range across an agenda comprising social economic and environmental elements.

1. the scale and form of much recent development
2. the capacity of the town to retain its character and identity in a growing urban area
3. the impact of existing and projected developments on the built heritage and the natural features associated with the coast, the Moyne River and the Belfast Lough
4. the provision of housing that can meet different household needs and provide affordable options

5. the lack of long term, permanent work in the town and the capacity of the town to retain and attract young people and new entrants into the workforce
6. the implications of an increasingly aged population and the implications of such a demographic structure for services and facilities
7. a growing questioning as to whether development for developments' sake is necessarily compatible with Port Fairy as a town and community
8. a growing concern that the scale of recent development and the level of likely future development may be detrimental to the qualities that are valued by long term residents and those who have been attracted to shift to and visit Port Fairy

Source:(Moynes Shire 2012)

The Port Fairy Urban Design Framework drew attention to the flooding issue and to the scale of development that was occurring in Port Fairy.

1.3 Portland

The City of Portland has recently completed an urban design framework for the Port of Portland area along with the Central Business District (CBD). The framework commented on the lack of available land for development in the CBD area and greater Portland area and the potential long term weakness and uncertainty in the Portland economy.

1.4 Frameworks Inner Workings

Each of the three design frameworks had a set of pre-determined parameters for Character; Continuity and enclosure; Quality of the public realm; Ease of movement; Legibility; Adaptability; Diversity and Sustainability. The parameters were generated through a series of ongoing public consultations and resident surveys.

The Portland design framework was influenced by the Portland Land Use model. This model which had its origins as a theoretical model was modified to become a practical applied planning tool. The Portland model was comprised of four sub models (Soils, Settlement, Population and Climate Change) along with a series of legal and physical constraints to reflect the current planning landscape and legal framework. The Portland Land Use Model includes a series of components including: an External Factor Evaluation matrix; Internal Factor Evaluation matrix; Scenarios and a Quantitative Strategic planning matrix.

An External Factor Evaluation Matrix is a strategic management tool often used to assess current conditions. It is a good tool used to visualize and prioritize the opportunities and threats that an organization is facing and is composed of five steps. The steps include (1) listing the factors; (2) assigning weights; (3) rating the factors; (4) multiplying the weights by ratings; and (5) Summing the weights by the ratings.

The Internal factor evaluation (IFE) matrix is a strategic tool used for evaluating strengths and weaknesses in organizations. The IFE matrix together with the EFE matrix is a strategy formulation tool and is created in three steps: Identifying the Key internal factors; Assigning Weights; and Rating:

Scenarios in land use planning have traditionally focused on: Population growth by a specific percentage each year; Expansion of various type of land zonings; the development of

The amount of land dedicated to open space (i.e. parkland (municipal and state parks, gardens and reserves and sporting reserves) for the combined three settlements and surrounding rural areas entire is 63987.5 Ha or 1.42 Ha per individual. This figure is misleading as the study area has 61,820 of state forest and park. Once this amount is removed from the total only 2168 Ha of open space has been allocated for the combined three cities and surrounding rural area with Warrnambool having 1572.54 Ha (i.e. 0.04 Ha per resident) Portland having 229.78 Ha (i.e. 0.0229 Ha per resident) and Port Fairy 363.86 Ha (i.e.0.129 Ha per resident).

2.5 Public Transport

Each of the three settlements has a viable municipal mass transit system comprised of private bus operations, Vline train service to Melbourne and scheduled airline services to Melbourne.

2.6 Current Water Resources

Ground water is the major source of water in South West Victoria. Groundwater is defined as “water that it is found under the ground. It is stored in and can flow through discrete layers know as aquifers.” (Glenelg Hopkins Catchment Management Authority 2003)

Ground water is extracted from the aquifers through the use of a bore hole. Eleven hundred and eighty nine (1189) are situated in the three settlements and surrounding country side.

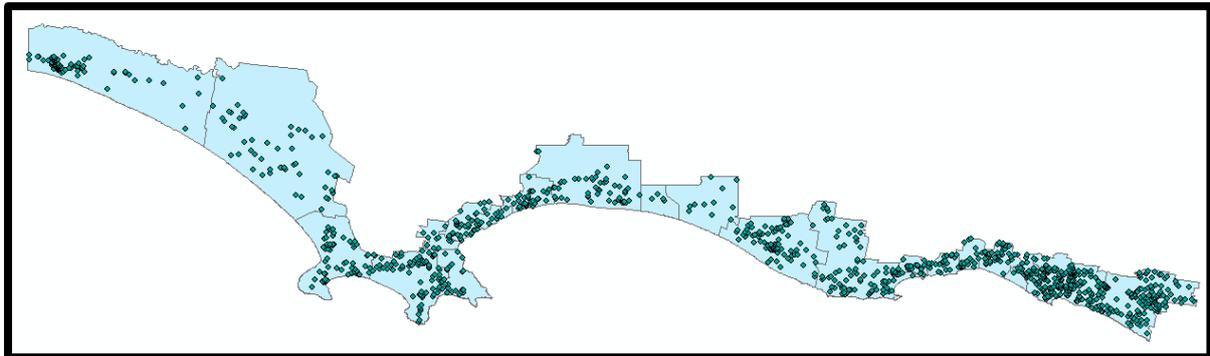


Figure 4 Ground Water and Borehole location for the three Cities and surrounding rural areas

Source:(Victorian Department of Primary Industry 2010)

The ground water is used in a variety of applications such as domestic & stock water supply; domestic water; ground water recharge; industrial and commercial water applications; irrigation and waste disposal.

2.7 Climate Change

The impacts of Climate Change on the three settlements and surrounding rural area include; increased evaporation rates, increased bush fire risk, more frequent and severe droughts; a projected decline in Victorian farm production; sea level rise of 0.8m by 2100 and more intense storms threatening coastal infrastructure.

2.8 Current Employment

The employment patterns from 1947 through 2010 shows persons in employment grew from 6,322 to 19,823 an increase of 13501 or 213.56%. The industries in the study area that have a local or national competitive advantage are: Manufacturing; Retail; Transport; Electricity Gas Water & Waste Services; Information, Media & Telecommunications; Accommodation; Public Administration and Agriculture

3 Future Scenarios for the Study Area and Settlements

A series of scenarios were developed to test the how sustainable the three settlements were. The scenarios involved:

1. Forecasting future population growth and its impact on land and water supply, urban and open space density the resulting increase or decrease in CO₂ emissions generated by human activity and forecasting the changing economic and employment environment.\

3.1 Scenario 1

Population increases

The state government has development population forecast for the period 2011 through to 2031 (i.e. 2011, 2016, 2021, 2026 and 2031).

Table 1 Forecast Population Increases for Warrnambool, Portland and Port Fairy

Town	Era	Forecast population Increase	Year	Total Population	Increase
Warrnambool	2011-2016	8.17%	2016	36,988	2795
	2016-2021	6.56%	2021	39,416	2428
	2021-2026	5.90%	2026	41,740	2324
	2026-2031	5.26%	2031	43,934	2194
Portland	2011-2016	3.12%	2016	11,891	2795
	2016-2021	3.76%	2021	12338	360
	2021-2026	3.47%	2026	12766	447
	2026-2031	3.16%	2031	13169	428
Port Fairy	2011-2016	6.08%	2016	2,970	696
	2016-2021	5.36%	2021	3,129	651
	2021-2026	4.82%	2026	3,280	617
	2026-2031	4.18%	2031	3,417	561

Source; (Victorian Department of Planning and Community Development 2012)

3.2 Landuse and future Land Requirements

Portland, Port Fairy and Warrnambool each have a land budget which contains a 10 year supply of vacant land for future residential, commercial or industrial expansion. Table 3 indicates the number current of vacant lots per city; the number of lots needed to house the expected increased population by era and the number of additional lots that will be required by 2031.

Table 2 Land Budget for expected housing growth

Location	Era	Expected Households	Lots Required for increased population	Surplus or Deficit of lots	Number of new lots required or created
Warrnambool	2011-2016	14,664	1285	Deficit	847
	2016-2021	15,904	1240	Deficit	2087
	2021-2026	17,063	1159	Deficit	3246
	2026-2031	18,158	1090	Deficit	4336
Portland	2011-2016	4486	166	Surplus	456
	2016-2021	4659	173	Surplus	283
	2021-2026	4819.	160	Surplus	123
	2026-2031	4970.	151	Deficit	28
Port Fairy	2011-2016	2052	122	Surplus	127
	2016-2021	2178.	126	Surplus	2
	2021-2026	2295.	118	Deficit	116
	2026-2031	2401.	106	Deficit	222

Source:(Herron Murray 2013)

3.3 Warrnambool Sustainability

As shown in Table 3 Warrnambool has a chronic residential land shortage needing a predicted 4,400 lots to meet the expected population increase by 2031. To resolve this issue Warrnambool has several options at its disposal:

1. Developing more residential land by rezoning the last agricultural land in the city;
2. Decreasing lot size and increasing urban density; and
3. Working with the surrounding municipality to co develop new residential areas adjoining Warrnambool and Port Fairy

Warrnambool is not sustainable in its current form. Residential density will increase from 913 individuals per square kilometre to 1253.82 in 2031 while open space density will decrease from 0.04 Ha per individual to 0.0346 Ha per individual. The density issue will need to take into consideration that the fastest growing segments in the Warrnambool population are the 45+ and 65+ age groups.

Warrnambool consumed 475 ML of its total water allotment of 750ML in 2010 (i.e. 62%). The current water consumption per dwelling is 166 kilolitres per dwelling per year, using this figure and extrapolating it forward to 2031 water consumption would go up to 3,014,228 Kiloliters or 3014.228 ML over four times the entire current water allotment. This factor again brings into consideration whether or not Warrnambool is sustainable.

There is a solution - Warrnambool currently has 4674 ML of recycled water at its disposal and to date has used not one drop of this resource, Warrnambool uses only 8.70% of its total water resources.

The Warrnambool Public Transport and bus system has the ability to expand to carry additional passenger and additional routes.

The Victorian State government believes the current and future economic growth of Warrnambool will “*focus on key industries where new investment is anticipated including dairying, energy and tourism with significant opportunities for further value-adding in major industries.*” (Victorian Department of Planning and Community Development 2013)

“By 2031 the largest sectors in the economy are projected to be healthcare, agriculture, manufacturing and construction. Other high growth sectors will include retail trade, financial, professional and scientific services and accommodation. This highlights a shift from primary production to a more service-based economy and will require workforce changes and services to support skills development and productivity improvements. Employment in manufacturing is expected to decline between 2011 and 2031, with healthcare, retail trade, accommodation and food being the largest employers by 2031.”(Victorian Department of Planning and Community Development 2013)

Limiting this scenario is managing competing demands for agricultural land, particularly in the corridor from Warrnambool to Portland, including limiting urban encroachment into highly productive agricultural areas. The reduction of agricultural land for housing will impact on future agricultural production and overall economic returns.

With the indicated expansion of Warrnambool population CO2 emissions have been forecast to double by 2050. This factor will be compounded by the effects of Climate Change on the Warrnambool coastline and landscape. Warrnambool has developed an environmental strategy that focuses on coastal management, waterways and wetlands, pest plants and animals, flora and fauna protection, parks, reserves and public open space development, community awareness and involvement, water and energy efficiency, recycling and accountability. The question is will this program be sufficient to ensure that Warrnambool will still be sustainable and liveable as it is today?

3.4 Port Fairy Sustainability

As indicated in Table 3 Port Fairy starts out with a residential land surplus and by 2031 has a chronic residential land shortage needing a predicted 222 lots to meet the expected population increase by 2031. To resolve this issue Port Fairy has two options at its disposal:

1. Developing more residential land by rezoning agricultural land that surrounds the city; and
2. Decreasing lot size and increasing urban density

To make Port Fairy sustainable in its current form residential density will increase from 344 individuals per square kilometre to 420.29 in 2031 while open space density will decrease from 0.129 Ha per individual to 0.106 Ha per individual. This density increase will need to take into consideration that the fastest growing segments in the Port Fairy population are the 45+ and 65+ age groups.

Port Fairy consumed 702 ML of its total water allotment of 1026 ML in 2010 (i.e. 68.4%). This figure takes into consideration the large agricultural component of water usage by the Port Fairy dairying industry which is one of the largest in Victoria.

The current water consumption per dwelling is 136 kilolitres per dwelling per year, using this figure and extrapolating it forward to 2031; water consumption would go up to 326,536 Kiloliters or 325.536 ML. This figure then needs to be added to agricultural water usage component (i.e. currently 425 ML per annum) to get a total water usage figure of approximately 750 M/L per annum. This amount of water is currently under the yearly water allotment of 1026 per annum. In addition Port Fairy has an additional 999 M/L of recycled water at its disposal giving the community a total volume of 2025 ML at its disposal. Port Fairy will not face a water shortage for the foreseeable future

The Port Fairy Public Transport and bus system has the ability to expand to carry additional passenger and additional routes.

As stated earlier the Victorian Government believes the current and future economic growth will focus on certain industries. In Port Fairy's case those industries are tourism, agricultural and retail based activities.

The reduction of prime agricultural land to support the increased housing demands of Port Fairy and Warrnambool will need to be managed to minimize the damage residential expansion will have on agricultural production.

Port Fairy is large producer of CO₂ emissions as a result of its large dairy industry. The increase in population by 2031 will further add to this total. Port Fairy has just introduced an environmental strategy which focuses on three issues: water conservation; soil quality and conservation and green house gas emissions.

Port Fairy is also subject to severe coastal flooding and erosion as the result of climate change. This issue is the number one long term factor threatening Port Fairy's sustainability. Port Fairy currently is sustainable but the long term prospects could be another matter.

3.5 Portland Sustainability

As shown in Table 3 Portland starts out with a residential land surplus and by 2031 has a residential land shortage needing a predicted 28 lots to meet the expected population increase by 2031. To resolve this issue Portland has several options at its disposal

1. Developing more residential land by rezoning agricultural land that surrounds the city
2. Decreasing lot size and
3. Increasing urban density

Portland is not facing the residential land issue that face both Warrnambool and Port Fairy.

Portland consumed 1797 ML of its total water allotment of 6222 ML in 2010 (i.e. 28.8%). This figure takes into consideration the large agricultural and industrial component of water usage by the Portland agricultural sector and the Portland Aluminium Smelter which is one of the largest in the world.

The current water consumption per dwelling is 158 kilolitres per dwelling per year, using this figure and extrapolating it forward to 2031 water consumption would go up to 785,260 Kiloliters or 785.260 ML. This amount of water is currently under the yearly water allotment of 6222ML per annum. In addition Portland has an additional 1235 M/L of recycled water at its disposal giving the community a total volume of 7457 ML at its disposal.

The Portland Public Transport and bus system has the ability to expand to carry additional passenger and additional routes.

As stated earlier the Victorian Government believes the current and future economic growth will focus on certain industries - in Portland's case those industries are industrial, transportation, tourism, agricultural and retail based activities.

Two key economic drivers for the Portland area are the Portland Smelter and the scheduled plantation forestry harvest. The Portland Smelter represents 700 jobs and 15% of the entire export GDP for the State of Victoria. The smelter has electricity contracts with the Victoria government until 2025 while the sustainable forestry plantation harvest was severely impacted by the Japanese earthquakes and corresponding nuclear events that occurred in 2010-2011. The entire forestry harvest was destined for the Japanese pulp and paper industry over a 20 year period. This industry is wholly based in the area affected by the tsunami and subsequent nuclear power-plant disaster, and has no immediate short or medium term date for the recommencement of pulp and paper production. The harvesting of the forest crop will not commence until the Japanese pulp and paper industry recommences the production of pulp and paper.

Portland is large producer of CO2 emissions which are the result of the Portland Smelter which consumes 25% of all electricity generated in Victoria all which is generated through the burning of brown coal.

Portland is also subject to severe coastal flooding and erosion as the result of climate change. This issue will be a long term factor that threatens Portland's sustainability.

4 Lessons learned and Further Applications

The use of the design framework has been expanded in Portland and Port Fairy. In Port Fairy the 2012-2013 flooding study conducted by the University of New South Wales outlined the impacts of flooding throughout the Port Fairy area. This information will in turn be used to broaden the parameters of the design framework to acknowledge the threat and impact of flooding in the Port Fairy region.

In Portland, the urban design framework is being adopted and used to frame the redevelopment of the Portland Waterfront. In the proposal the Portland waterfront would be transformed into a waterfront precinct.

Warrnambool has used its design framework for the partial redevelopment of its CBD, further commercial development to the western and eastern sections of Warrnambool will be guided by the design framework.

5 Summary

The continued sustainability of the three cities hinges on factors which are controlled by the cities themselves. In Warrnambool's case higher density limits and the use recycled water will ensure a sustainable future.

For Port Fairy the major issue is flooding and coastal erosion both of which can be mitigated through coastal management.

Portland faces issues of economic sustainability and is the most vulnerable of the three settlements. Portland must foster and develop other industries beside the smelter and the economic exploitation of natural resources for its future prosperity.

The urban design frameworks have identified specific concerns for each of the settlements. As stated earlier *Urban Design is the art of making places for people...People and their actions will make a place sustainable or not. (Marshall 2001)*

References

City of Warrnambool 2011, Warrnambool Urban Design Framework, Warrnambool.

Glenelg Hopkins Catchment Management Authority 2003, Regional Catchment Strategy 2003-2007, Hamilton, Victoria.

Goggle 2013, Google Earth, Google, <www.google.com/earth>.

Herron, M 2012, Portland Urban Design Framework, Portland.

Herron Murray 2013, 'Sanity in Coastal Planning Decisions', PhD thesis, Deakin University.

Marshall, R 2001, "Contemporary urban space-making at the water's edge" in Marshall R. ed. (2001) Waterfronts in Post-industrial Cities, SPON Press London and New York.

Moyne Shire 2012, Port Fairy Urban Design Framework, Port Fairy.

Strzelecka, M 2010, The role of place attachment in revitalization of neighborhood parks, <www.academia.edu>.

Victorian Department of Planning and Community Development 2012, Victorian Population Projections, Melbourne, Vic.

Victorian Department of Planning and Community Development 2013, Great South West Coast Draft Regional growth Plan, Melbourne, Vic.

Victorian Department of Primary Industry 2010, Victorian Geological Dataset, Victorian Department of Primary Industry, Melbourne, Vic.

Adaptive strategies of urban disaster recovery planning

Mark KAMMERBAUER, Technical University Munich, Germany

1. Introduction

When disaster impacts cities, planners are required to address two central aims: on the one hand, cities need to recover after disaster, and on the other, urban development that existed before disaster is supposed to continue afterwards. For both aims, forms of planning exist: recovery planning and urban planning. How similar and how different are they? How do they complement or contradict each other in the case of urban disaster? What role do existing conditions as well as the scale of disaster play, and how can planning adapt to these situations? Is it possible to plan for the rebuilding of existing structures and necessary improvements at the same time?

To address this subject matter, this contribution deals with contradictions between recovery planning and urban masterplanning in the case of the urban mega-disaster in New Orleans in the US after Hurricane Katrina. While recovery planning is intended to enable a 'return to normal', urban master land use planning is aimed at an alteration or transformation of a given situation. In the case of New Orleans after Hurricane Katrina in 2005 the Citywide Recovery Plan had to adapt to the aftermath of disaster, while the new Masterplan advocates growth and improvement. Here, the conjunction of particular spatial, institutional and social aspects of the city and the scale of disaster seems critical.

In the following, socio-spatial perspectives as theoretical basis for this contribution will be outlined in connection to urban planning and disaster recovery planning. A methodological discussion will describe the employed case study approach. For this contribution, data were selected from the author's empirical long-term case study based on mixed-method quantitative and qualitative research in New Orleans. A quantitative questionnaire survey conducted in 2007 with an impacted population in a particularly hard-hit area of the city, the Lower Ninth Ward, serves to indicate vulnerabilities related to societal and spatial aspects and the capacity to recover and rebuild. Qualitative interviews were conducted in 2009 with key individuals in federal and local institutions and planning authorities involved in the recovery process. Their integrated observation permits identifying weak links between spatial, social, and institutional aspects.

The conclusion will correlate these aspects and indicate processes of adaptation in recovery planning amidst contradictory planning aims and problems of repopulation and rebuilding in the city. Questions of density of impacted neighborhoods emerge against the background of existing urban shrinkage processes. The case study area demonstrates massive population loss and low rebuilding rates, related to vulnerabilities, stratification, and lacking capacity to rebuild. Recovery plans and related institutions in New Orleans adapted to these circumstances through the definition of Policy Areas and the Lot Next Door program, while the new Masterplan permitted potentially unsustainable development in low-density neighborhoods.

Knowledge-based planning recommendations may enable a balance between existing conditions and necessary adaptation and improvement to support quick, yet also sustainable recovery in the case of urban mega-disasters. The approach is applicable to cases of urban disaster in the USA and adaptable to other (global) cases of coastal and peri-coastal metropolises subject to (hydro-meteorological) risk by taking the particular spatial, institutional, and social context into account.

2. Socio-spatial approaches to planning

Socio-spatial perspectives in urban studies and disaster research provide a theoretical basis for research on planning in the context of both cities and disaster and their relation to social and demographic aspects. These perspectives state that "spatial or environmental and locational considerations are always part and parcel of everyday social relationships" (Gottdiener and Hutchison 2006:xv). This is based on a political economy approach towards the production of space by associating economic development "with important factors in the social and political change of metropolitan space" (Gottdiener and Hutchison 2006:86). These relate to particular social and demographic aspects, including "social class, race, gender, ethnicity, age, family status, and religion (Gottdiener and Hutchison 2006:1) and refer to spatial aspects such as "the clustering of homes according to family income" (ibid.). Research topics include policy and programs, questions on growth, and possible improvement of living conditions in urbanized environments (Gottdiener and Hutchison 2006:xvi). These refer to "the activity of planning, which seeks to obtain the best living and working arrangements in developing cities" (Gottdiener and Hutchison 2006:314).

Planning can be described as an activity that has the capacity "to predict the consequences of its actions" (Campbell and Fainstein 2003:2) and to adapt "to changes in the city and region, which in turn are transformed by planning and politics" (Campbell and Fainstein 2003:4). Its aim is "to alter the existing course of events" (Campbell and Fainstein 2003:6) by addressing "social, economic, and environmental challenges" (Campbell and Fainstein 2003:8). The fact is pointed out that planning is context-specific, as "problems and conditions of planning are not everywhere the same" (Friedmann 2003:76). In addition, there exists a field of tension between existing conditions and structures and intended or envisioned changes within them or impacting them: "the new will be resisted, not because it is new, but because it threatens to displace something that already exists" (Friedmann 2003:78).

Contemporary urban planning includes "participatory, broad-based strategies for managing urban change" (Kaiser and Godshalk 1995:367) and comprehensive plans that may include information on "amount, pace, location, and costs of growth as policy choices" (Kaiser and Godshalk 1995:374). In this regard, a master plan for contemporary land use planning can serve as a framework "for community consensus on future growth" (Kaiser and Godshalk 1995:366) in relation to "effective implementation under turbulent conditions" (Kaiser and Godshalk 1995:367). Plans also serve to apply for grants from the federal government, e.g. for urban renewal purposes (Kaiser and Godshalk 1995:370).

2.1 - Planning for disaster recovery

A brief review of relevant concepts serves to discuss planning for disaster recovery. Disasters can be defined as consensus crises as opposed to conflict crises (Tierney 2006a). US legislative definitions of natural disaster include "hurricane, tornado, storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought" (Stallings 2005:240-241). Government authorities are required to respond when a disaster occurs and causes a "breakdown of public order and safety" (Dombrowsky 1998:20). The "trigger determines the measure" (ibid.) of institutional intervention. At the same time, socio-spatial perspectives in disaster research point out that the way societies alter their environment can contribute to disaster (Hoffman, Oliver-Smith 2002).

Emergency management includes the skills required to deal with harmful occasions such as disasters and is considered a public service (McEntire 2006:169). Within the disaster cycle (cf. Smith and Birkland 2012), it can be structured into phases, including planning and preparedness, mitigation, response, and recovery. In the US, the Robert

T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) serves as legislative basis for emergency management. It defines how the Federal Emergency Management Agency (FEMA) and other institutions operate during and after disaster (Witham et al. 2007:13-14).¹ Governmental assistance is supposed to enable the “reconstruction and rehabilitation of devastated areas” (42 U.S.C. 5121-5207 2007:1), and the Stafford Act calls for communities to return to “normal pattern[s] of life as soon as possible” (42 U.S.C. 5121- 5207 2007:48). For this purpose, recovery funding is provided through supplemental appropriations approved by US Congress.

Research on the recovery of cities after disaster points out that “the time needed for reconstruction reflects not only the amount of damage and the available recovery resources, but also predisaster trends” (Haas, Kates, Bowden 1977:xxvi). Urban disaster is considered an interruption of existing urban development processes, including growth. Existing conditions are seen to inform the progress of recovery after disaster: “stable, stagnant or declining cities recover slowly and may even have their decline accelerated” (Haas, Kates, Bowden 1977:19). Recovery is considered complete when the evacuated population has returned, debris has been removed, and infrastructure and services have been restored.

Recovery can be structured into periods including restoration, replacement reconstruction, and betterment reconstruction, each requiring successively longer amounts of time in relation to the scale of disaster. The latter may be oriented towards future urban development (Haas, Kates, Bowden 1977:3). Overly ambitious plans may cause delays within the recovery process, and enabling a transition between the two reconstruction periods is recommended. Planning can also lead to inequalities in the context of “official priorities to provide disproportionate assistance to certain kinds of people and certain kinds of places” (Vale and Campanella 2005:353). Thus, rebuilding is correlated to “value-laden questions about equity [and] the needs of low-income residents” (Vale and Campanella 2005:13).

2.2 - Social aspects: stratification and vulnerability

When researching urban disaster recovery, city and disaster can be identified as a dual context. Within the respective discourses on cities and disasters, socio-spatial research perspectives point out the relevance of social aspects and inequalities. In cities, the concept of stratification indicates social disparities that immanently refer to spatial aspects. In disasters, the concept of vulnerability points out how social and demographic aspects impact the capacity of populations to respond to disaster. In the case of urban disaster, both concepts can be correlated. Stratification describes how individuals are distributed asymmetrically “across social categories that are characterized by differential access to scarce resources” (Massey 2007:1-2). These social categories can be defined according to specific characteristics including “gender, age, and kinship” (Massey 2007:2). Inequality serves to measure degrees of stratification and is reinforced when social and spatial aspects overlap, as in the case of spatial segregation (Massey 2007:19). In US cities these problems are historically related to “the problems of racial inequality” (Wilson 1987:20).

Vulnerability indicates why populations are impacted by disaster to differing degrees in relation to root causes of historic or societal origin. Vulnerability and natural hazards combined are seen to produce disaster based on “a chain of root causes embedded in ideological, social, and economic systems (...) and specific sets of unsafe conditions” (Hoffman and Oliver-Smith 2002:28). Social characteristics of “class, race, ethnicity, gender, or age” (ibid.) serve as indicators in relation to “specific political, economic, and social variables” (ibid.). Vulnerability is considered “a condition that already exists before a hazard triggers disaster [and] is part of people’s everyday life” (cf. Wisner et al. 2004). In addition, certain locations can be identified that contribute to

vulnerabilities, such as “high-density population concentrations in flood plains” (Quarantelli and Perry 2005:343). Access to resources comprises a significant indicator that refers to inequalities that existed before the impact of disaster and are related to “a livelihood in normal, pre-disaster times” (Wisner et al. 2004:94). After disaster, progress in recovery is based on access to resources, including funding, loans, and insurance monies (Tierney 2006b).

3. Case Study Methodology

This contribution features data from the author's empirical case study research in New Orleans and a particularly hard-hit area of the city, the Lower Ninth Ward in 2007 and 2009. A case study methodology was selected to research the interrelation of planning and social aspects of urban recovery after disaster. Case studies may draw from “multiple sources of evidence” (Yin 2009:18) and are useful when cases are unique or offer “a phenomenon previously inaccessible to social science inquiry” (Yin 2009:48). Communities are possible research units for case studies (Yin 2009:12) and can be related to the concept of neighborhood in urban space, as “neighborhood is often the place where people find community” (Williams 1985:34). Researching communities can “provide evidence of specific links to sociospatial organizations in the area” (Gottdiener and Hutchison 2006:195-196). Neighborhoods in return can be differentiated according to social characteristics of “wealth, race, and gender [and] differences in individual lifestyles” (Gottdiener and Hutchison 2006:141).

This paper proposes a research unit in the city based on its progress in recovery, i.e. where recovery is below the city average in terms of physical rebuilding, repopulation, and the impact of post-disaster planning. It focuses on an area that is confronted with weak recovery within a context of preexisting socio-spatial conditions and corresponding recovery programs. Central factors for the selection of an appropriate research unit include the degree of destruction of the built environment, the degree of repopulation, urban vulnerabilities in recovery, and their relation to recovery planning and master planning in the city. These are outlined here and followed by a description of the employed methods, which include document research and archival review, a quantitative questionnaire survey, and qualitative semi-structured, open-ended interviews.

3.1 - Selection of research unit: Lower Ninth Ward

After Hurricane Katrina impacted the Gulf Coast of the US in August 2005, congressional emergency supplemental appropriations provided funding for recovery, while the impacted states were responsible for action plans (Czerwinski 2007:2,9-12). Funding was increased also due to Hurricane Rita, which struck in September 2005. The immense degree of housing damage in combination with uninsured losses or insufficient funding based on insurance payouts, private resources, and loans comprised key issues in the recovery of individual homeowners.

Based on the action plan submitted by the state of Louisiana, the state's central rebuilding effort titled the Road Home program² faced numerous problems, including a difficult and slow application process, budget deficits, and legal and regulatory conflicts causing changes while the program was running. The most significant change was the inclusion of a buyout option, which enabled applicants to sell their properties and homes to the state instead of rebuilding them. This essentially counteracted the program's original aim. In 2009 approximately 45,000 Road Home program closings took place in New Orleans, of which 40,000 decided to rebuild (GNOCDC 2009:13). According to 2010 estimates, “approximately 4,500 properties (...) were sold to the state via the Road Home program” (Plyer 2010:3) and were acquired by the New

Orleans Redevelopment Authority (NORA). By June 2009 the Road Home program had produced 4,600 buyout properties that were unevenly distributed across planning districts. The Lower Ninth Ward or Planning District 8 comprised 776 buyout properties at that time - not the highest quantity, yet the highest rate among city planning districts.

After peaking in 1960 at 33,000 population numbers in the Lower Ninth Ward had declined to 19,500 before Katrina. It was hit hard particularly by floods caused by collapsing flood walls along the Industrial Canal, which intersects the urban fabric. The Lower Ninth Ward is comprised of two identifiable neighborhoods (Holy Cross and Lower 9 neighborhoods, the latter sometimes also called Lower Nine or Lower Ninth Ward neighborhood) and includes Jackson Barracks, a historic military facility now serving the Louisiana National Guard situated along the border to St. Bernard Parish. Existing social aspects in the Lower Ninth Ward include a majority African American population, high poverty rates, an above-city average percentage of homeowners, and high levels of disabled and elderly citizens. Dense social networks existed, related to patterns of generational housing and long-term residency (cf. GNOCDC 2009; H3 Studio Project Team 2007; The ACORN Housing/University Partnership 2007). For these reasons, the Lower Ninth Ward was selected as research unit.

3.2 - Quantitative and qualitative mixed methods

The case study employs mixed methods, including document research, a quantitative questionnaire survey, and qualitative semi-structured interviews with key individuals. The empirical research took place in 2007 and 2009 in New Orleans, Houston, and Washington, D.C. The quantitative questionnaire survey was conducted in 2007 and served to research vulnerabilities of a population sample group that lived in the Lower Ninth Ward before Katrina. The major share of the sample group had returned to New Orleans after Katrina, while some had not yet been able to return at that time and lived in Houston, a major destination for Katrina evacuees. The questionnaire was designed to enable comparison with the US Census (GNOCDC 2000; GNOCDC 2003a; GNOCDC 2003b) and a larger survey conducted among New Orleans evacuees in Houston (Wilson and Stein 2006). The author surveyed respondents at three occasions: in New Orleans in the Lower Ninth Ward at a Holy Cross Neighborhood Organization meeting and in St. Maurice Church, and in Houston at the Lakeside Estate Housing Complex. 75 completed questionnaires were collected and calculated as 100 percent. The questions aim at evacuation and return, housing conditions, and support in recovery.

In 2009 the author held qualitative semi-structured interviews with key individuals in federal, state, and local institutions involved in the recovery process. The interviews served to critically address how legal frameworks, programs, and plans informed the recovery process. For this purpose, a set of topical question modules was developed forming a pool of questions that could be targeted to specific interviewees. Confidentiality was guaranteed and interviews recorded digitally. Verbatim transcripts were then created and submitted to the interviewees for edits, corrections, and approval.

4. Results

In addition to selecting data from the quantitative questionnaire and the qualitative interviews for this section, the following documents were reviewed: the 'Citywide Strategic Recovery and Rebuilding Plan' (City of New Orleans n.d.), the 'Master Cooperative Endeavor Agreement Between the City of New Orleans and the New Orleans Redevelopment Authority' (City of New Orleans and New Orleans Redevelopment Authority 2008), the New

Orleans Redevelopment Authority's 'Community Improvement Planning Areas'. (NORA n.d.), and the 'New Orleans Master Plan and Comprehensive Zoning Ordinance' (City of New Orleans et al. 2009). Initial recovery planning proposals in New Orleans after Katrina included the 'Action Plan to Rebuild New Orleans' of the Bring New Orleans Back Commission (BNOB) and the 'New Orleans Neighborhoods Rebuilding Plan' presented by the City Council. Eventually, the 'Unified New Orleans Plan' (UNOP) was developed as a collaborative effort and outlined the aims of the 'Citywide Strategic Recovery and Redevelopment Plan' ('Citywide Plan'). It focuses on reconstruction after disaster and is defined as a type of plan different than a master land use plan. The Citywide Plan was created by a 'Citywide Team' that included "local urban planning practitioners and university professors" (City of New Orleans n.d.:13) who collaborated with District Planners from "nationally recognized architectural firms" (ibid.) within a participatory planning process that resulted in the creation of district and neighborhood plans.

The Citywide Plan describes the priorities of reconstruction in the city in relation to funding within a recovery timeframe spanning 5 to 10 years. It serves to guide the recovery process "in a rational way that creates stability and paves the way for future growth and prosperity" (City of New Orleans n.d.:9). The aim is to achieve a "quality of life in New Orleans [that] is back to – or better than – what it was before Katrina" (City of New Orleans n.d.:10). However, the UNOP also acknowledges that "it cannot be assumed that everyone will want to, or be able to, return to the City" (City of New Orleans n.d.:9). This is also related to lacking "financial or manpower assets to fix everything at once" (City of New Orleans n.d.:10), and leads to a prioritization of recovery efforts according to Policy Areas:

"Policy Area A – Less flood risk and/or higher repopulation rates

"Policy Area B – Moderate flood risk and/or moderate repopulation rates

"Policy Area C – Highest flood risk and slowest repopulation rates" (City of New Orleans n.d.:65).³

The New Orleans Redevelopment Authority (NORA) was originally responsible for neighborhood development and clearance of slums as Community Improvement Agency. Based on a Master Cooperative Endeavor Agreement NORA became the city's contractor in the recovery effort in 2008. NORA already had the competence to acquire blighted properties before Katrina (NORA n.d.). To deal with both blight and the vacancies created by Road Home buyout properties, NORA developed the 'Lot Next Door Incentive Program Management' (Lot Next Door program). It offers homeowners the opportunity to purchase adjacent properties in this context from NORA (City of New Orleans and New Orleans Redevelopment Authority 2008:12). As result, homeowners can both increase the size (and value) of their properties, yet also contribute to an increase of neighborhood repopulation percentages.

In the course of the planning processes and citizen participation taking place after Katrina, the new district and neighborhood plans were integrated within a new master plan aimed at a twenty-year timeframe. In 2007, the City Charter was amended, thus providing the basis for the City Planning Commission to create the 2030 Masterplan and Comprehensive Zoning Ordinance in relation to "the city's capital improvement plan [and] a neighborhood participation system for land use decision making" (City of New Orleans et al. 2009:3.12). How and where do the aims of these planning documents become contradictory, where did adaptation occur, and how are these issues related to social aspects in the research unit? The following interview excerpts offer insight into these questions.

4.1 - Qualitative interviews

A staff member of the United States House of Representatives Committee on Homeland Security (WDC-RDH-2009.05.22) responsible for emergency management

issues discussed the impact of federal legislation on post-Katrina recovery. Using the CDBG program to provide funding for recovery is considered appropriate, since it comprises “a useful (...) preexisting tool that is able to be funded very quickly” (ibid.). As result, legislation “didn’t have to be an authorization of a new program to send money to the state” (ibid.). CDBG may pose problems, yet also benefits: “states can use it for whatever they want” (ibid.), while it offers the opportunity to propose plans “to the federal government from the ground up” (ibid.), since “nobody understands the issues on the ground like the locals do” (ibid.).

The Director of Real Estate Strategy of the New Orleans Redevelopment Authority (NO-OS-2009.06.12) offered a detailed view on interactions between recovery funding, programs, and plans. The fact that the state of Louisiana received the CDBG funding for recovery is not considered beneficial for rebuilding the city: “the rules of a traditional program like CDBG do not fit disaster recovery” (NO-OS-2009.06.12), because “you need somebody willing to take legitimate and reasonable interpretation” (ibid.). However, “because you have a state that is in charge of stewarding this money, they have no incentive ultimately to take an aggressive interpretation (...) because that ensures they will never have to repay a dime of this money” (ibid.). As a result, this procedure is seen to be “responsible for an incredible number of problems with the recovery” (ibid.). Most prominently, the Road Home program became “a fundamentally unfair program to New Orleans, yet sort of inevitable if you are letting decisions being driven by the state” (ibid.), due to its “disproportionate share of the rental-type programs” (ibid.). This emerges as a problem in a city that has a large rental population: “the state is something like a 75 percent homeownership state, but New Orleans is at 40 percent” (ibid.).

In this regard, the decision to include the buyout “didn’t do anything to promote collective action” (NO-OS- 2009.06.12) and resulted in “no effective procedures to guarantee rebuilding” (ibid.). This was viewed as “a massive failing. Because now you could take that money and walk away” (ibid.). Orienting Road Home grants on pre-disaster property values contributed to this situation: “If you lost a 50,000 dollar house, it will still cost you 150,000 dollars to rebuild” (ibid.). As result, Road Home applicants may be confronted with funding gaps and choose the buyout option: “if you only give someone 50,000 dollars for their house they lost that was in a poor neighborhood, it didn’t make sense for them to go with the rehab program, and they might have sold you the property” (ibid.).

The difficult application procedures of the Road Home program were intended “to make sure that people weren’t improperly applying for it” (NO-OS-2009.06.12), yet impacted the recovery of the city: “if it took you 3 years to get money to rebuild your house, and you have just spent three years living somewhere else, (...) re-uprooting your life to come back is not necessarily what is going to happen. So that delay in getting the money out had tremendous consequences that far exceeded anything you would have lost by using a more simple or straightforward calculation methodology” (ibid.). As a result, the Road Home program contributed to low, incomplete, and uneven repopulation.

The Citywide Plan was required to adapt to this by formulating different recovery policies and Policy Areas. This is also due to the fact that a recovery plan didn't exist when Katrina struck, preventing timely coordination with the Road Home program: “what you would have wanted would have been for this Road Home Program to match your recovery plan” (NO-OS-2009.06.12). The Policy Areas are differentiated according to degree of destruction and repopulation. The most successful belong to Policy Area A, comprising the historic parts of the city that received little damage. Policy Area B includes “all those neighborhoods that were safe prior to Katrina and are right now in the states of 45-50 percent occupancy” (ibid.). Here, recovery is confronted with “high

levels of vacancy and (...) drastically depressed real estate prices” (ibid.). However, the repopulation of the third type is the decisive aspect: “until it gets from that sort of incredibly vulnerable 50-80 percent unoccupied level, it is a neighborhood that is a lot more likely of going down than it is of going up” (ibid.). The most difficult neighborhoods belong to Policy Area C: “urban areas in tremendous states of decay” (ibid.) defined by “[h]istoric poverty combined with massive storm damage, population loss, economic loss” (ibid.). Planning here needs to be “relatively narrowly targeted. You pick a few blocks, a few zones” (ibid.). The notion is that otherwise “you will quickly dilute whatever is feasible, whatever energy those areas have” (ibid.).

The new Masterplan and Comprehensive Zoning Ordinance is viewed critically due to its emphasis on growth. However, New Orleans was a shrinking city before Katrina and struggled with slow repopulation in particular areas during the recovery phase: “basically the Masterplan is projecting very high levels of growth for the city, which runs contrary to the last 45 years, and ignores the facts that in a tremendous number of our neighborhoods we’re facing an incredibly difficult challenge right now, in that they’re 50 percent occupied” (NO-OS-2009.06.12). This resulted in the presence of “far more urban spaces than people who want to live in them” (ibid.). Yet, the Masterplan is seen to contradict this situation: “it allows multifamily development outside the downtown” (ibid.). Instead, “for reasons of de-densification for integration and everything else, a single family plotting of people is a much more resilient pattern” (ibid.).

Lacking coordination between state and local programs and plans led to a situation where the recovery plan needed to adapt to the actual situation and depart from the return to normal paradigm. The conclusion is made that “planning and recovery confronts very difficult challenges in how to handle and control shrinkage” (NO-OS-06.12.2009) due to repopulation rates and urban densities. As for recovery, the most important thing is getting money into people’s hands quickly” (ibid.).⁴ However, shrinkage was not adequately acknowledged by the Masterplan. This caused problems particularly in hard-hit neighborhoods with existing social disparities belonging to Policy Area C with existing conditions such as low incomes and low property values. These resulted in recovery funding gaps that contributed to deciding for the buyout option. The following data illustrate related social aspects identified within the author's empirical research.

4.2 Quantitative questionnaire survey

The following selection of questions from the author's quantitative questionnaire survey in 2007 deal with reasons for returning to New Orleans, circumstances of homeownership, damages to homes, support from institutions, and access to resources.

Question 15. Describe your residence (before and after Katrina). Before Katrina, 71 respondents lived in a house. This changed significantly after Katrina: 19 individuals lived in a house, 15 in an apartment or condominium, 15 in a mobile home or trailer, 8 noted 'other', and 18 did not respond. A significant number of participants had not returned to the housing conditions they had lived in before the disaster.

Question 17. Did/Do you own or rent your residence? (before and after Katrina) 60 respondents noted they had been homeowners before Katrina, while 11 had been renters and 4 didn't answer this question. After Katrina, 41 individuals remained homeowners. The number of renters rose to 19, and 15 provided no answer. The majority of participants were homeowners before and after the disaster, yet figures declined significantly.

Question 18. Was your home damaged? 42 individuals answered that their homes were 'strongly damaged'. The homes of 28 respondents were 'completely destroyed'. The Holy Cross subgroup, with its lower number of completely destroyed homes, reflects to the fact that the Holy Cross neighborhood, located along the natural levee of the Mississippi, also incurred less damage than the adjacent Lower 9 neighborhood.

Question 24. Are you back in your old home? 14 participants noted they had returned to their pre-disaster homes. 47 individuals hadn't been able to move back at that time. 14 provided no answer. Despite having returned to the city, a large majority was still either dependent on interim housing, which indicates that these citizens had not yet completed their individual rebuilding efforts, or had moved on to alternative housing solutions in the city.

Question 28. What makes help difficult? This question features examples that made receiving assistance difficult either 'very much', 'somewhat', or 'not much'. In each case, respondents noted that receiving help was 'very' difficult: in the case of insurance paperwork (26 individuals), in terms of FEMA paperwork (21 individuals), and regarding building permits (14 individuals). The fourth example is medical attention, an aspect relevant to researching vulnerabilities (here, 19 noted 'very much' in terms of difficulty in receiving help).

Question 26. Are there other reasons that make returning difficult? The answers here show that 'no money' is the most significant reason that makes return difficult (32 answers). Traumatic experiences are summed up in 'bad memories' (22 answers), followed by absence of family and friends (17 answers) and lack of security (17 answers). While access to monetary resources appears most important, social capital (or absence thereof) also emerges as an important factor.

While these questions already indicate the problems citizens face in recovery, the comparison with the Houston subgroup offers insight into why people cannot return. It can be compared with a larger study among Katrina evacuees from New Orleans who had arrived in Houston (Wilson and Stein 2006), which concludes that the evacuees who remained in Houston were unlikely to return mostly "because very few of these respondents owned their homes in New Orleans" (Wilson and Stein 2006:7). In comparison, the author's survey also features a majority of individuals that noted their ethnicity as African American. Incomes were below \$25,000 (7 respondents noted a household income of less than \$15,000 after Katrina), and the majority were renters. Differences include the fact that the author's survey indicated a higher average age of participants (42.5 years) and a higher degree of female respondents. In sum, lacking access to resources can be correlated predominantly to existing demographic aspects of income and ethnicity. In the context of disaster, they can be interpreted as vulnerabilities that existed before the disaster; in the context of the city, they can be identified as aspects of stratification; and in recovery, they translate into access to resources:

- most respondents are homeowners who had been able to return;
- most housing was either strongly damaged or completely destroyed;
- difficulties emerge in applying for support in recovery;
- the degree of renters increased;
- long-term evacuees are mostly renters with low income;
- returning individuals require alternative housing during recovery.



Figure 1: Lower Ninth Ward, N Villere St @ Cherbonnet Street (the author 2009)



Figure 2: Lower Ninth Ward, typical shotgun house (the author 2009)



Figure 3: Lower Ninth Ward, multi-family development (the author 2009)



Figure 4: Lower Ninth Ward, small rental property (the author 2009)

5. Conclusion

The following contradictions between recovery planning and masterplanning that emerged in the aftermath of the Katrina disaster in New Orleans can be identified: the Citywide Plan addresses shrinkage, while the Masterplan advocates growth. The context that both refer to is based on existing conditions and the scale of disaster, resulting in uneven recovery in the city, where some areas are more and others are less successful in their repopulation and rebuilding efforts. The Road Home program for individual homeowner recovery contributed to this situation by offering the buyout option, exacerbating low rebuilding rates in hard-hit neighborhoods. Planning and institutions in recovery in the city were required to adapt to this situation in terms of recovery policies and programs, thus proposing perspectives of urban development that contradicted the aspirations of the new Masterplan. These forms of adaptation include the Citywide Plan's Policy Areas and NORA's Lot Next Door program.

Due to uneven repopulation and rebuilding, the Citywide Plan formulated three different policy areas. Policy Area C denotes parts of the city that experience below-average repopulation and rebuilding, thus necessitating targeted recovery initiatives. This departure from the return to normal paradigm of recovery planning is related to the existing conditions in these areas. They inform the progress of recovery after the disaster, and the existing spatial and social aspects can be interpreted as vulnerabilities in disaster and inequalities of stratification. The selected research unit, the Lower Ninth Ward, exemplifies these conditions with a pre-storm majority African-American population with below-average incomes and homeowners with low property values. In addition to this, the Road Home program's buyout option enabled residents with funding gaps and limited access to resources to sell their properties to the state and leave. The situation is most pronounced in the Lower 9 neighborhood, partially below sea level and subject to increased risk, compared to the historic Holy Cross neighborhood, situated along the natural levee of the Mississippi.

Blighted properties and Road Home buyout properties are made available to residents via NORA's Lot Next Door program, a form of adaptation in recovery planning aimed at fostering infill development. In Policy Area C this becomes extremely difficult, due to low repopulation rates. However, this situation is further complicated by the aspirational aims for urban growth formulated in the new Masterplan. It supports large multi-family development throughout the city. Thus, its aims become doubly contradictory: they defy historic shrinkage before Katrina and low repopulation rates in hard-hit areas of the city after the disaster. These observations indicate the weak link between institutional aspects of recovery and related social and spatial aspects. However, the entire rebuilding process is not yet complete, and despite weak recovery in the Lower Ninth Ward, nonprofit organizations purchase Lot Next Door properties from NORA to further rebuilding efforts.

For recovery to be effective, institutional support and funding must be quick. Recovery planning and masterplanning, while comprising two different forms of (urban) planning, require coordination of planning goals in relation to existing conditions. Therefore, the author proposes the following planning recommendations: planning before disaster is beneficial, as it enables coordination between recovery programs and plans. State-led recovery funding and programs must take into account that cities comprise particular ratios of homeowners and rental populations: strategies need to be adjusted accordingly. To assist both homeowners and renters in low-density neighborhoods, the author suggests targeted and early support for Small Rental Properties, particularly where infill development appears more sustainable than large multi-family development. Rebuilding what existed before the storm ('reconstruction') and improving this situation ('betterment') need to be balanced carefully to avoid contradictions between shrinkage and growth.

While the empirical data refers to an American example, the theoretical basis, the methodological approach, and the sociological and community-oriented methods enable application to other contexts and similar (potential) cases. Due to global urbanization

processes and the potential dangers of (anthropogenic) climate change and sea level rise, plenty of coastal and peri-coastal metropolises come to mind in this regard. The existing conditions of the city - social aspects that are continually informed by spatial aspects - appear as significant factors that influence recovery planning. In the case of urban disasters, to value what exists in the city becomes a matter of survival during recovery after disaster.

Endnotes

- 1 In this context, planning is supposed to take place before disaster and may complement other planning activities oriented towards urban development while also stating "land acquisition needs during recovery" (McEntire 2006:173). Planning may also contribute to mitigation, defined as "efforts to prevent disasters or minimize impact through hazard and vulnerability assessments, improved construction practices, and better land-use decisions" (McEntire 2006:172). Mitigation may include structural (built) measures and non-structural measures, such as legislature, zoning, or building codes.
- 2 After receiving massive housing damage due to Hurricanes Katrina and Rita, the state of Louisiana created a coordinating institution, the Louisiana Recovery Authority (LRA). Use of funds as intended by the LRA was subject to approval by the state legislature. The LRA developed the Road Home program, which was introduced in 2006 with the intention to "encourage homeowners to (...) begin rebuilding" (Czerwinski 2007:7) and "re-establish their lives in Louisiana" (Road Home n.d.:n.p.). The program's primary focus were owner occupants, who could apply for grants based on property values "before the storms and the amount of damage that was not covered by insurance or other forms of assistance" (Czerwinski 2007:7). The Road Home program was continually altered and comprised four different options for homeowner recovery assistance defined as repair, rebuild, relocate, or sell. Preconditions included that applicants were owner-occupants of "a single or double unit structure" (Road Home n.d.:n.p.) as "main residence at the time of the hurricane" (ibid.) and that FEMA had categorized these structures as either 'destroyed' or with 'major' or 'severe' damage. Applicants could receive a maximum grant sum of \$150,000. Other forms of support, e.g. insurance monies, were deducted from the total amount. The Road Home program included a component for the owners of rental properties, including "large developers and small property owners" (ibid.). These were implemented only after delays.
- 3 To address recovery problems of hard-hit areas of the city, the Citywide Plan was supplemented by the Citywide Recovery Implementation Strategy (Recovery Strategy), created by the Office of Recovery Development and Administration (ORDA) and adopted by the City Council in 2007. The Recovery Strategy defined Target Recovery Areas in 17 neighborhoods "in need of urban transformation as the result of pre-Katrina deterioration as well as damage incurred both during the 2005 Hurricane Season" (City of New Orleans and New Orleans Redevelopment Authority 2008:1-2).
- 4 Differences between planning for recovery and for 'normal' urban development are pointed out. For instance, independent planning commissions exist so "that politicians aren't able to dictate (...) waivers and variances" (NO-OS-2009.06.12). The precondition for this is "insulat[ing] as many of these boards and commissions from the political process" (ibid.). During disaster recovery, however, "that is all upside-down" (ibid.).

References:

City of New Orleans (n.d.) The Unified New Orleans Plan (UNOP). Citywide Strategic Recovery and Rebuilding Plan <<http://planning.uno.edu/Lakefront/docs/UNOP-FINAL-PLAN-April-2007-15744.pdf>> 26.04.2011

City of New Orleans, New Orleans City Planning Commission, New Orleans Office of Recovery and Development Administration, New Orleans Master Plan and Comprehensive Zoning Ordinance Consultant Team (2009) New Orleans Master Plan and Comprehensive Zoning Ordinance. Draft 21 March 2009 <<http://www.nolamasterplan.com>> 24.04.2009

City of New Orleans, New Orleans Redevelopment Authority (2008) Master Cooperative Endeavor Agreement Between the City of New Orleans and the New Orleans Redevelopment Authority <[http://www.noraworks.org/PDFs/NORA_CNO Cooperative Endeavor Agreement.pdf](http://www.noraworks.org/PDFs/NORA_CNO_Cooperative_Endeavor_Agreement.pdf)> 28.04.2009

Czerwinski, Stanley (2007) Gulf Coast Rebuilding. Preliminary Observations on Progress to Date and Challenges for the Future. Testimony Before the Subcommittee on Disaster Recovery, Committee on Homeland Security and Governmental Affairs Committee, U.S. Senate, Washington, D.C.: United States Government Accountability Office <<http://www.gao.gov/new.items/d07574t.pdf>> 15.04.2008

Dombrowsky, Wolf (1998) "Again and again: Is a disaster what we call a disaster", What is a disaster: Perspectives on the question, Quarantelli E. (ed.)

Friedmann, John (2003) "Toward a Non-Euclidian Mode of Planning", Readings in Planning Theory, Campbell S. and Fainstein S. (eds.)

Campbell, Scott and Fainstein, Susan (2003) "Introduction: The Structure and Debates of Planning Theory", Readings in Planning Theory, Campbell S. and Fainstein S. (eds.)

GNOCDC (2000) Percent African American by Census block group in Orleans Parish, New Orleans: Greater New Orleans Community Data Center <http://GNOCDC.org/maps/race/pdfs/african_american.pdf> 12.11.2007

GNOCDC (2003a) Income & poverty comparison for neighborhoods within Orleans Parish, New Orleans: Greater New Orleans Community Data Center <http://www.GNOCDC.org/xls/nbhd_income.xls> 12.11.2007

GNOCDC (2003b) People & household characteristics comparison for neighborhoods within Orleans Parish, New Orleans: Greater New Orleans Community Data Center <http://www.GNOCDC.org/xls/nbhd_people.xls> 12.11.2007

GNOCDC (2009) The New Orleans Index, New Orleans: Greater New Orleans Community Data Center <<http://GNOCDC.org/NewOrleansIndex/index.html>> 17.08.2009

Gottdiener, Mark and Hutchison, Ray (2006) The New Urban Sociology, Boulder: Westview.

H3 Studio Project Team (2007) A Framework for Sustainable Resilience in the Lower Ninth Ward. Introduction to the District <http://willdoo-storage.com/Plans/D8/District_08_Lower9th_Chapter_01_Introduction_to_the_District.pdf> 12.11.2007

Haas, J. Eugene and Kates, R., Bowden, M. (1977) Reconstruction Following Disaster, Cambridge: MIT Press.

Hoffmann, Susanna and Oliver-Smith, Anthony (2002) Catastrophe & culture: the anthropology of disaster, Santa Fe: School of American Research Press.

Kaiser, Edward and Godshalk, David (2007) "Twentieth Century Land Use Planning: A Stalwart Family Tree", The City Reader, 4th edition, LeGates R., Stout F. (eds.)

Massey, Douglas (2007) Categorically Unequal. The American Stratification System, Thousand Oaks: Sage

McEntire, David (2006) "Local Emergency Management Organizations", Handbook of Disaster Research, Rodriguez H., Quarantelli E., Dynes R. (eds.)

NORA (n.d.): Community Improvement Planning Areas, New Orleans: New Orleans Redevelopment Authority <http://www.noraworks.org/district_8.htm> 12.05.2009

Plyer, Allison (2010): Benchmarks for Blight. How does New Orleans compare to other cities in terms of unoccupied residential addresses? New Orleans: Greater New Orleans Community Data Center <<http://www.GNOCDC.org/BenchmarksForBlight/index.html>> 17.05.2010

Quarantelli, Enrico (1998) What is a disaster? Perspectives on the question, New York: Routledge.

Quarantelli, Enrico and Perry, Ronald (2005) What Is a Disaster? New Answers to Old Questions, n.c.: International Research Committee on Disasters

Smith and Birkland (2012) "Building a Theory of Recovery: Institutional Dimensions", International Journal of Mass Emergencies And Disasters, Vol. 30 No. 2 August 2012

Stallings, Robert (2005) "Disaster, crisis, collective stress and mass deprivation", What is a disaster: New answers to old questions, Quarantelli E., Perry R. (eds.)

The ACORN Housing/University Partnership (2007) A People's Plan for Overcoming the Hurricane Katrina Blues

<http://www.aap.cornell.edu/aap/crp/outreach/nopi/upload/Peoples_Plan_for_9th_Ward.pdf> 12.11.2007

The Road Home (n.d.) Overview. Building A Safer, Stronger, Smarter Louisiana <<http://www.lpb.org/programs/LApublicsquare//LRARoadHome.pdf>> 24.10.2010

Tierney K. (2006a): "Social Inequality, Hazards, and Disasters" On Risk And Disaster Lessons From Hurricane Katrina, Daniels R., Kettl D., Kunreuther H. (eds.)

Tierney, Kathleen (2006b) "Foreshadowing Katrina: Recent Sociological Contributions to Vulnerability Science", Contemporary Sociology, Vol 35 No 3

Vale, Lawrence and Campanella, Thomas (2005) The resilient city: How modern cities recover from disaster, Oxford: Oxford University Press.

Williams, Michael (1985): Neighborhood Organizations. Seeds of a New Urban Life, Santa Barbara: Greenwood Press

Wilson, Rick and Stein, Robert (2006) Katrina evacuees in Houston: One-year out (white paper) <http://brl.rice.edu/Katrina/White_Papers/White_Paper_9_8_06.pdf> 12.11.2007.

Wilson, William (1987) The Truly Disadvantaged. The Inner City, the Underclass, and Public Policy, Chicago: University of Chicago Press.

Wisner, Ben and Blaikie P., Cannon T., Davis I. (2004) At Risk: Natural hazards, People's Vulnerability and Disasters, New York: Routledge.

Witham, Elizabeth and Bowen S., Kohout R., Maloney S. (2007) Financing Recovery From Catastrophic Events. Final Report 30 March 2007 prepared for Department of Homeland Security Science & Technology Directorate, Arlington: Homeland Security Institute <http://www.homelandsecurity.org/hsireports/Financing_Recovery_HSI_final_report.pdf> 25.05.2009

Yin, Robert (2009): Case Study Research. Design and Methods Applied Social Research Methods Series Volume 5, Sage: Thousand Oaks.

42 U.S.C. 5121-5207 (2007): Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, and Related Authorities. United States Code Title 42. The Public Health and Welfare Chapter 68. Disaster relief. FEMA 592. <http://www.fema.gov/pdf/about/stafford_act.pdf> 26.04.2011

Interviews (the author):

(WDC-RDH-2009.05.22) Professional staff, Committee on Homeland Security. Washington, D.C., 22.05.2009

(NO-OS-2009.06.12) Director of Real Estate Strategy, NORA. New Orleans, 12.06.2009

Space and Narratives: Interdisciplinary Approaches to Reading Socio-Spatial Interplays in Rapidly Urbanizing Environments¹

KRISHNAMURTHY, Sukanya, Ph.D., Canada

Abstract

The city is represented not just by its physical fabric, but also by collective representations of various characteristics that contribute to its making- memory, identity, forgetting, transformations, history etc. Understanding diverse representations and systems that exists in cities is critical both in planning and theorizing how urban spaces can be analyzed and studied. To approach various facets of socio-spatial interplays, this paper advocates the combining of structural theorists such as Choay, Lefebvre and Rossi to create an empirical matrix that bridges physical and social attributes of urban environments. The empirical matrix aims to study various phenomena such as evolution and identity of various spaces, memory associated space, place-making, attachment to name a few.

Bangalore, like any of the many large urban centers (or mega regions) is living under the umbrella of economic and cultural changes that has now become synonymous with modern India. When the developed matrix was applied to the city of Bangalore, India it enabled the identification of sites that were meaningful locations that people made, inhabited, visited and participated inherently linked to the production of memory, identity and attachment. This paper highlights new approaches to identifying spaces of importance in rapidly urbanizing environments that are beneficial to long term urban renewal plans and, identifying and protecting spaces of local importance.

One of the primary aims of this paper is to highlight the importance of creative research methodologies particularly in dynamic urban environments, the matrix encouraged the study to deal with observable patterns, various historicity's, political, economic and social productions. The interdisciplinary approach of combining various theories, empirical data and qualitative methodology brought out nuances in an urban environment that is currently striving to find a balance between globalized and local expression of urban space.

1. Introduction

Bangalore (India) like many urban centers around the world is under constant threat of transformation- political, social, cultural and architectural. Living through various transformations over the last two hundred years, the city has had to both imagine itself and re-imagine itself many times over. Under this context of constant flux, first subject to the British rule (late nineteenth to mid twentieth century) followed by liberalization of the markets (late twentieth century) and the IT boom (last twenty five years), historical process within the city have left many an indicator on the urban form. Within the Indian subcontinent, Bangalore is an example where the changes that the city has faced in terms of urban transformation can be traced with relative ease mainly due to the presence of the past in various distinct and distinguishable layers. These sites or markers from regimes of yesteryears play dichotomous roles as of sites of memory and sites of urban transition.

Discerning how various regimes that the city experienced and its many forms affected the production of heterogeneous urban space, this paper explores open ended narratives on the role of architecture, identity and place-making. Investigating a landscape of chequered

¹ Sections of this paper are part of a Ph.D. dissertation titled 'Reading Architecture/Remembering/Forgetting Interplay: Development of a Framework to Study Urban and Object Level Cases' by the author. The thesis was defended in November 2012 at Faculty of Architecture, Bauhaus Universität, Weimar. Email: krishnamurthy.sukanya@gmail.com

architectural history to trace and analyze how rapidly urbanizing environments accommodate for spaces of everyday importance in globalizing climates, this paper develops a strategy of study that bridges the physical and social parameters of urban form. The analysis is approached through the structural, semiotic and representative nature of urban form (or architecture).

Urban environments can be considered as inherently complex, dynamic and transformative in nature (Eco, Lynch, Rossi, Lefebvre, Halbwachs, Harvey, Boyer et.al.); to accommodate for these characteristics the paper formulates a qualitative matrix that balances these various attributes. Though a number of theories have been put forward to connect diverse narratives and physical form, in this paper the works of Aldo Rossi, Henri Lefebvre and Françoise Choay were seminal in informing the matrix construction. Each of the above stated theoreticians developed various parameters through which dynamic urban spaces can be studied, while highlighting the need to understand space as more than a physical construct.

The first section focuses on the primary aim of the paper, to develop a methodology that connects and expands on the various roles that urban environments play. In building the said matrix and using various interdisciplinary qualitative methodologies, the paper contributes to finding a way to traverse and connect myriad socio-spatial narratives, expanded in the latter half of the paper. Applied to the urban environment of Bangalore, the study encouraged the identification of sites of local importance from various strata's of urban development, existence of local heritage sites and commemorative acts that (re) connected space and inhabitants were brought forward.

This paper highlights that in reading narratives in space, urban form moves from its purely physical semblance to the realm of the symbolic and commemorative, connected to identity production and attachment or place making. In order to study urban environments that are complex and inherently transformative, the paper illustrates the heightened need for innovative interdisciplinary methodologies that can accommodate variances and be shaped depending on context of study. The study concludes that urban form when read and observed as a mnemonic and commemorative platform, acts as a marker and material witness contributing to notions of representation, individual and social identity; thereby not just expanding upon traditional definitions of urban environments, but also highlighting the role that local sites (or architecture) play in globalizing climates.

2. Constructing the theoretical framework and matrix

Based on the technique developed by Françoise Choay (1969) in *Urbanism and Semiology* with the aim to bridge the empirical analysis of architecture with certain rhythms in the city that are spatial in their orientation, this section develops a theoretical framework that can be adapted and used as an analytical guide in various urban environments. By expanding upon Choay's work on differentiating architectural analysis into various layers to include the theories of Rossi, Lefebvre, Halbwachs and Connerton, the framework moves to encompass elements needed to observe various narratives that lend itself to spatial expressions.

Choay's work can be interpreted as a strategy to connect the analysis of urban form with narratives in the city that are spatial in their rhythm. Through her work one understands that spatial rhythms in a city can be read through: (1) architectural systems or spatial organizations, (2) auxiliary systems in usage (symbolism, rituals etc.) and (3) syntagms; patterns and elements that are defined in relation to each other – and in relation to the whole structure. Parallels can be drawn between her work and Aldo Rossi's presentation of reading a city and patterns. In *Architecture of the City*, Rossi advocates using evolution of space as a toolkit to study patterns and developments of architectural space or systems. For Rossi studying the evolution of a spatial system helps in identifying sites of permanence or urban artifacts in the city that provide a framework for understanding the forces that shaped form. Rossi (1984, p.21-22) states 'the theory of urban artifacts, stems from the identification of the city itself as an artifact and from its

division into individual buildings and dwelling areas'. He also introduces the concept of 'primary elements' that expands on the role that certain elements exhibit heightened sense of meanings given their roles in urban landscapes (Rossi 1984, p.22). This concept is seminal in identifying spaces of importance in a given environment.

Though Rossi is emphatic upon the production of architecture and its relation to society, he does not expand on how these sites are socially produced or represented. Through the readings of Henri Lefèbvre, the production of social space and socio-spatial practices with respect to architecture can be expanded upon. In *The Production of Space*, Lefèbvre (1991, p.18) stresses that architectural space is not space itself, but only a way of look at space, which is a space of social practices. Lefèbvre (1996) describes the city and its urban life as a dynamic dialectic process of possibilities and encounters. Complimentary to Rossi, he describes the development of society and the city as dialectics between different kinds of human interactions and practices acted out in space. Lefebvre (1991, p.38) proposes a spatial triad that he labels as 'the three moments of social space' (the perceived-conceived-lived) to distinguish various characteristics of spatial production to aide the argumentation between actual space and mental space.

Between Choay's and Rossi's urban form production and patterns, and Lefèbvre's social space, approaching the question of studying urban space gets a framework that is rooted in both architecture and social practices. By combining theories that are structural in root urban environments can be studied and analyzed as morphological systems that are related inherently to social production and practices.

Constructing the empirical matrix

In the act of threading various theories together the aim is to build a matrix that bridges commonalities that exists between the various theoreticians. Through the brief theoretical introduction above, it can be concluded that the city can be studied and represented not just by its physical fabric and form, but also by collective representations of various characteristics that contribute to its making- like history, identity, transformations, memory etc. Understanding of forms and morphological systems arises from the study through the observation of various actions, social practices that both produce and transform the spaces and the forms it contains.

The aim of the framework is to help identify sites wherein spatial narratives can be experienced and observed in a dynamic urban environment. Building on Choay's initial strategy, to accommodate Rossi, Lefebvre, Halbwachs and Connerton, the following process of development can be diagrammatically represented:

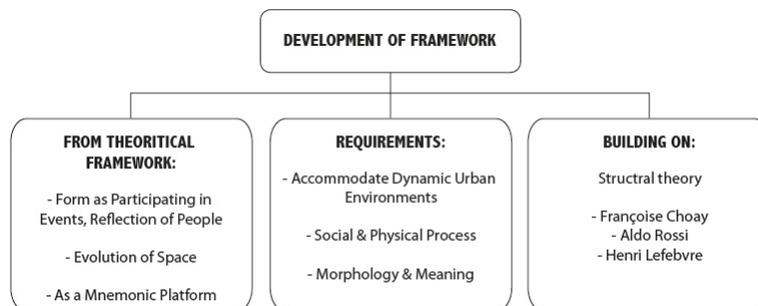


Fig 1. Process of framework development

The process of developing the framework contained three distinct steps as highlighted in Fig. 1 and was based on the works of the theorists briefly outlined in the previous section. To accommodate the dynamic and transformative nature of urban environments, it was necessary that the developed matrix had the potential to address simultaneously the social and physical

production of space and behaviors. Following through on rigorous questioning and critique of the motives behind the creation of such frameworks in various discussions, the resultant empirical matrix expanded as a network diagram (Fig. 2) was used to discern possible sites on socio-spatial interplay within an urban environment.

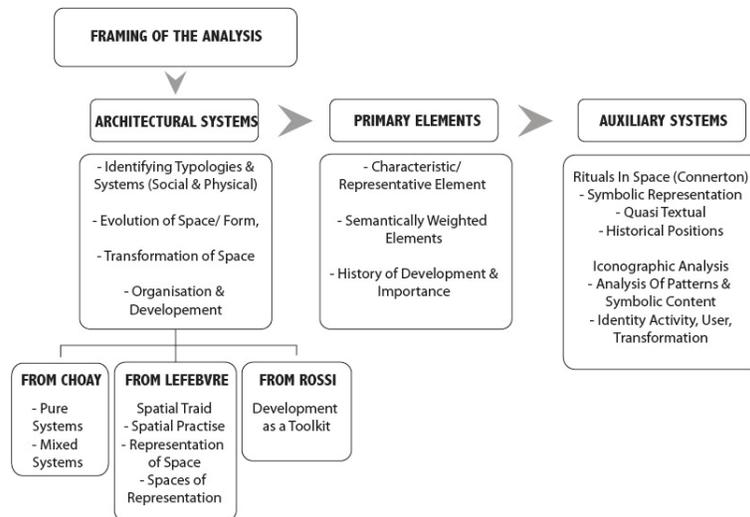


Fig 2. Empirical matrix derived and developed from various theories

The matrix expands on first establishing predominant architectural systems that exist in the selected urban environment. This helps in identifying evolution of space and recognizing the patterns or strata's of development (from the theories of Choay, Rossi and Lefebvre), before progressing towards positioning sites of importance and primary elements. The matrix also takes into account auxiliary systems of communications such as iconography and rituals that provides a holistic picture of various narratives that can be observed. Each of the three distinct steps though identified independently as process to undertake when applied to an urban environment go almost in parallel. It is important to note that each step offers observations and evaluations that lead to identifying diverse narratives in urban space and described in detail through the empirical study of Bangalore, India.

3. Application of the empirical matrix: Bangalore, India

For a city that can trace it's living and built history² to mid sixteenth century, the urban landscapes went through various stages of development from that of a small village hamlet to a cantonment of the British times and is featured on the list of fastest growing cities of the world.³

These belts of development through the last centuries have had distinct observable characteristics in lieu with various period's of economics and social practices the city experienced. Using this as a keystone for commencement for the empirical work on the city, this

² Though traces of various regimes (from fourth century AD onwards) can be discerned within the genealogy of the city this was considered out of the scope of this work. The reference year for the birth of an urban settlement described in the next sections is early sixteenth century. Refer Hasan 1970, Nair 2005, Mathur and Cunha 2006 for more details.

³ According to the international independent think tank City Mayors Foundation cities in the India, China, Africa and South America's are among the top 100 featured cities as the fastest growing cities in the world. City Mayors Statistics, 'The world's fastest growing cities and urban areas from 2006 to 2020', http://www.citymayors.com/statistics/urban_growth1.html [21 July 2012].

section describes the climate that produced various forms, behaviors and attachments. Elaborating on the development of the urban landscape both in terms of form and the processes through which certain elements of architecture developed in conjunction with prevalent practices of the given period, leading to zones with distinct characteristics where various forms of socio-spatial interplay can be recorded.

A diachronic approach to the investigation gave access to study areas and the contrasts between various stages of development i.e. studying not just the system of development but also how the production of meaning and function developed. The biggest challenge with the urban study was the problem of scale and selecting of the various methods for collecting and collating available data and forming an analysis of the same. The identifying of a specific zone helped with narrowing down the process through which certain elements are ascribed with meaning leading to attachment and narratives in urban space. This line of investigating encouraged the study of various layers within the urban space and helped trace sites of importance in parallel.

The following sections expand on the implementation of developed matrix that lead to the identification of the history of forms and settlement patterns within the city (that lead to its amalgamated identity and structure) and the discerning of various primary elements.

3.1. Step 1: Identifying Architectural Systems

Tracing predominant architectural systems, regimes and patterns of development is the first step in the developed framework. As with other cities in the Indian sub continent, Bangalore's history of urbanization can be characterized into four main economic, political and architectural paradigms: Kingdoms, Colonization, Post-Colonization and Globalized Spaces. During each of the four periods, a specific typology of urban space can be identified along with development of important or primary spaces within each of these development zones. Based on Chakravorty's (2000) classification of periods of paradigms in Calcutta, a similar paradigm can be drawn for Bangalore.

Time Period	Political Regime	Economic Climate	Planning
Pre 1537	Various Kingdoms	Trade, business	Organic
1537-1790	Kingdom	Regional trading, shop keeping, regional production	Organic
1790-1937	Colonialism	International market distribution, exploitation, segregation	Colonial
1947-1991	Post-Colonial Democracy	State lead import, substitution industrialization	Start of modernist planning
1991-present	Post-Colonial Democracy	Liberalisation of markets	Global developments

Table 1: Various planning paradigms in the city of Bangalore and the division of the four zones. Based on Chakravorty (2000) and Stallmeyer (2006).

The organic city, which is one of the models of pre-colonial south Indian planning between the sixteenth and eighteenth century, contained a fort (*kote*), settlement/ market area (*pete or pettah*) and large artificially constructed body of water or tank (*kere*). The growth of the city is attributed to its geographical location in the South Indian peninsula, its relatively central position meant that the city was in the crossroads of routes going north-south and east. The

agglomeration of various settlements around the ample tanks in the region, growth of local markets and growing population were the markings of a region facing potential growth.

Bangalore attracted the attention of the British in late eighteenth century, who saw the geographical location and climate as favorable conditions to establish a cantonment (or Civil

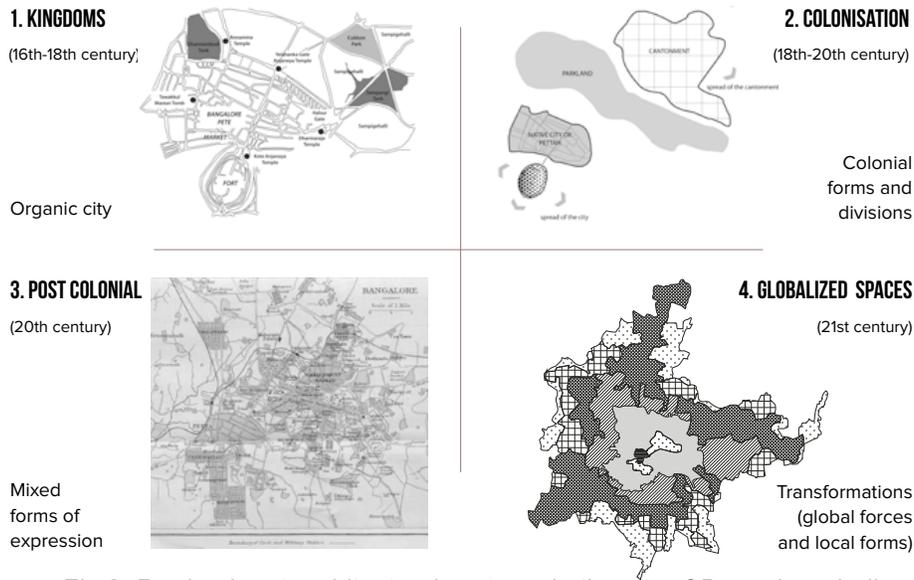


Fig 3. Predominant architectural systems in the city of Bangalore, India

and Military Station) in the city. As with other colonial cities, the period of colonization saw division of urban form between the colonizers and the natives. The introduction of new planning methods such blocks, squares and grids differentiated the organic city from the colonial one. The contemporary city still retains the swathe of parkland that once divided the two cities as a remnant from colonial times. Following the fall of the British in the mid twentieth century, post-colonial Bangalore faced with the uphill task of combining two cities to create a unified identity. Urban form remained divided well into the seventies and eighties

Lastly, the global spaces within the city are responses to new pressures that the city faces. Bangalore, as hypothesized in the *Informational City* by Manuel Castell (1991) can be defined as a space/ site of global production and consumption practices. The liberalization of the Indian economy and growth of the information technology industry and the effects on urban space has been the topic of many an academic debate. The culminating effects of a small town grown into a metropolis of nearly nine million inhabitants is situated within the confines of small town dreams and contrasted by the need to compete with other cities on a global front.

By studying these processes individually what came to the forefront was the complexity of the situation within the city and the type of methodological direction that could facilitate the understanding of socio-spatial narratives within the city through various architectural systems. By going through the process of identifying systems and regimes, the process yielded a direction towards identifying zones of importance.

Through the first step of the matrix, four broad architectural systems in the city were identified where each of the systems developed under the influence of various regimes differing in planning, economics, political and social norms. Within each regime, patterns and structures in the city developed in almost disjunction with existing forms and independent of planning strategies that existed at the given time, these varied approaches to planning contributed to the resultant form in the city today.

Given that the four architectural systems spread over an urban area of more than seven hundred square kilometers with nearly nine million in population it was necessary to identify a

zone that could behave as a background to study specific socio-spatial narratives, i.e. create an empirical boundary of study. To fulfill this requirement from the four systems, the organic city or the oldest section of the city that remained a fixed point of historic reference was selected as a zone wherein to explore the concepts of socio-spatial narration. This selection was based on a mix of morphological and iconographical characteristics, existence of various urban rituals, and myriad spaces of transformation in a singular zone. An important factor that contributed to its identification was the repeated emphasis that the organic city was given in various discourses during the time of case study visits.

3.2. Step 2: Identifying Primary Elements

The system developed by Aldo Rossi (1984, p.22) provides an approach for studying relations between 'semantically weighted elements'⁴ and other urban elements within the development of the urban fabric. A primary element is a space of local importance and represents a definitive phase in the development of a layer in a given or selected zone. These elements are not necessarily historical in nature, but elements or spaces that play either major or minor roles of importance within a certain regional or local contexts. They go beyond a level of physical importance and can be read as a concept developed through the relationships that these elements have within their surroundings.

Founded in sixteenth century the area of the Pettah and the Fort has remained the historic core of the city for the last five hundred years. Studying this form and the practices within this space speaks of the connections to the past and the coming of different waves of transformation. Though the area has changed demographically, spatially it retains the forms from yesteryears, the narrow roads, divisions based on professions, narrow houses with mixed business and living quarters remains the characteristic of the space (see Fig. 4).

Identifying primary elements within the organic city was done through a number of qualitative steps starting with observation and focus groups (5-7 people), before moving on to targeted interviews, videographies and go-alongs. Focus groups provided a broad base of ideas to work on ranging from historical sites in the old city or Pettah to traditional spaces of occupation that were fast disappearing. Through a series of interviews and discussions, archival material analysis and various focus groups⁵ possible locations of primary elements were collected. Within the old city the following quantifiers were identified⁶:

- 1) Historic Sites: Fort, Pettah and Tanks
- 2) Religious institutions
- 3) Markets and squares
- 4) Traditional living quarters and occupations

One of the first exercises conducted was the mapping of main pettah zone, showcasing its inherent organic shape, highlighting spaces or zones that were extinct but retained attachments to both the inhabitants of the space and general public, and lastly identifying where primary elements were positioned. Fig. 4 highlights primary elements identified in the pettah that are explored in detail through the following sections. Predominantly the mapping of primary

⁴ Françoise Choay introduces the concept of 'semantically weighted elements', to show the relationship between minor elements and those elements related to the concept of power. The relationship between these various elements helps both the reading of the urban space and an indication of how the urban setting evolved.

⁵ The focus was to get a cross section of people who were both familiar and unfamiliar with the area. To get diverse unbiased opinions focus groups were held in various places in the city (including the Pettah). Focus group 1: Inhabitants of the Pettah and general public; Focus group 2: Planners, researchers, architects and university students; Focus group 3: General public and school students.

⁶ Through the exercise a number of sites were identified (more than a hundred locations) and what is highlighted here are the sites that were common or repeated in various conversations.

elements were along the main roads that divided the pettah into various sections, highlighting importance of visual interaction of everyday spaces and degree of local importance.

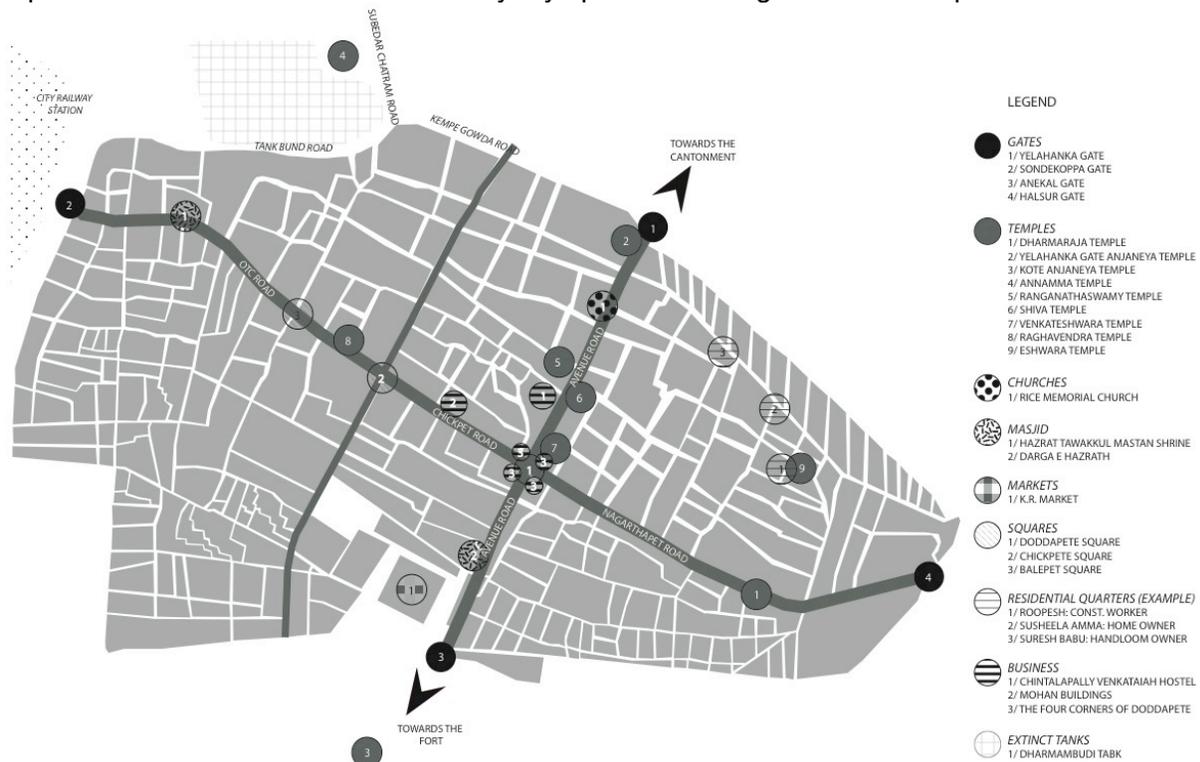


Fig 4. Primary elements identified in the organic city or pettah. The map also highlights the organic growth of the city with narrow roads in the city of Bangalore, India

Historic Sites: Fort, Pettah and Tanks

Though none of the former grandeur remains, a partial remnant of the sixteenth century fort draws to it a constant stream of visitors. This site is slowly regaining emphasis within the city's landscape through interventions from city based NGO's, tourist and conservation groups. The 're-appearance' of the Fort within the urban landscape of the city lays emphasis on the making of new mental images with the inhabitants, an aspect that has so far been neglected.

We studied this in school when I was much-much younger, responds Anand when asked about his visit to the fort wall and the markets. It didn't even occur to me that this historic site still exists in the city until a friend of mine visited this place a few months back. Today we have come as a big group to be tourists in the city we live in (and laughs).⁷

In relation to the disappearing fort, the Pettah area plays a more significant role in tracing narratives within urban space. Through the presence of certain social characteristics and urban form retention, the Pettah forms a zone charged with various stories and behaviors. The area was once a predominantly market and residential areas has slowly transformed into what is now referred to as 'the city'. By using Kevin Lynch (1992, p. 2) and his theories on mental images '... one particular visual quality: the apparent clarity of legibility of the cityscape. By this we mean the ease with which its parts can be recognized and can be organized into a coherent pattern',

⁷ Interview with tourists on site, Anand Balasubramaniam, Software Engineer. May 2011

this zone can be analyzed as one that has retained recognizable patterns. The marked divisions in space based on business or function drives the notion of legibility here, as years of settlement based on certain patterns are recognizable and is also communicated through behaviors in the space.

For the Pettah, an area that acts as an artifact to the city (through its presence of a historical core, function and form) constitutes to 'containing' the historical and collective memory of the city provided a necessary link to the past of the city as Eisenman (1992, p.10) expands 'For Rossi, the city is a theatre of human events. This theatre is no longer just a representation: it is a reality. It absorbs events and feelings and every new event contains within it a memory of the past and a potential memory for the future'. The entire Pettah area exists as a zone that contains history, memory and place attachment that has grown through various stages and centuries, it is important to see the zone in its entirety before studying the elements that contribute to its characteristics. In a city of constant transformation it serves to bring the past into the present, providing a past that can still be experienced (Eisenman 1992).

Similarly the role of tanks (small bodies of water) cannot be overlooked, given that the pettah evolved due to its close proximity to two tanks north and south of its boundaries. Though extinct (land-filled), the functions that revolved around these tanks continue, economic and religious continue.

Religious institutions

Religious institutions within the South Asian context play the role of the community's focal point in terms of not just centers of worship but also the institution around which communal and in the past educational activities took place. Though the relevance of these institutions are fast changing in a landscape of modernization and technology, within the Pettah area some institutions continue to hold on to strong traditions and attachments to form and associated practices.

The existence of various religious institutions⁸ within a small area speaks of not just the diversity of religions but stands testimony to the various regimes and demographical shifts whose introduction brought in new forms of religious practices within the pettah. Apart from the economic division that can be easily perceived from the urban form, the existence of various social groups in terms of religious affiliations can also be discerned. The common urban space that these various intuitions act upon and occupy, attests to various faiths, rituals and myths.

Markets and squares

Historically the Pettah area developed as a mix between residential quarters and entrepreneurial spaces. In the last centuries, though the demography has undergone various shifts, the mixed character has remained constant. Markets within the Pettah areas, both permanent and temporary have always played a role as an important node for exchange of goods, and continue to attract residents of the pettah and the city.⁹

The city's oldest square is at the junction of the two main roads in the Pettah (see Fig. 4), and is also the site where the founder of the city decided the urban boundary in sixteenth century. Though there is no evidence of this event on site, city lore and myth have strong references to the role that this site played in establishing the kings' regime (Hassan 1970 p.14)

⁸ Within the Pettah area there are Hindu Temples, Churches and Mosques, each with a distinct patronage populace.

⁹ For more details on interviews, maps and data on markets please refer Krishnamurthy 2012.

Traditional living quarters and occupations

As the urban environment is home to a myriad number of communities (weavers, oil extractors, textile manufactures etc.), form reflected function and individual community's identity. Divided by profession and communities, the urban environment was identified by occupation that lent itself to the naming of a particular zone.

Over the last decades this identification through communal identity has been disappearing, divisions within the family and escalating land value has dictated and forced new forms of residential quarters in the Pettah (apartment style living). The pettah though has small pockets of traditional living quarters (see Fig 4), When the case study of this area was carried out in 2011, the distinction between residential spaces and business activities were hard to discern given the rate of transformation.

3.3 Step 3: Auxiliary systems: Rituals in space

Karaga

The Karaga and Bangalore city are conjoined by a complex web of relationships, associations and themes. It is the ultimate grand spectacle, a ritual and social performance that converts the urban landscape and its inhabitants from being just a backdrop, to dynamic, living participants. In its subtext lie the dominant themes of dualities/transformation that co-exist on various meta-physical and spatial levels.

Aliyeh Rizvi, City Blogger¹⁰

The Karaga festivals, is one of the oldest festivals celebrated in the city, though driven by the community of Tigala's, it now brings together thousands of people from the city for a week long celebration. In the act of all these people agglomerating in one place, sites in the Pettah that are generally lost in everyday are reignited.¹¹

Karaga is an annual religious performance/ritual that takes place through the lanes and at specific sites within the Pettah. Connerton (1989: 44) defines the word 'ritual' as rule governed activity of a symbolic character, which draws the attention of its participants to objects of thought and feeling which they hold to be of special significance. He continues that rituals 'are formalized acts, and tend to be stylized, stereotyped and repetitive... they are not performed under inner momentary compulsion but are deliberately observed to denote feelings'. The event of the Karaga is a historic ritual that continues to play out yearly and is attended by a large segment of the population of the old city and from other parts of the city as well.

The Karaga is described here due to its relevance and attachment to urban form, sustaining group memory and the process through which it is conveyed. Studied as a commemorative event, one that supports the conveying the traditions of the past to the present. The Karaga is a performance dedicated to the goddess Draupadi and is a festival celebrated by the community of the Tigalas. The Tigala community were a group of horticulturalists (gardeners) who settled near tanks across the city and developed the tradition of this performance that continues till today.

The locus of the performance is the Dharmaraja Temple in the city (marked as No. 1 in the Fig. 5) that traditionally belonged to the group of the Tigalas. The event is spread over eleven-day duration (during the months of March-April) with the last day of the festival culminating with the carrying of the sacred pot through the streets of the Pettah. The movement

¹⁰ "The Bangalore Karaga – The Sons of Draupadi". <https://aturquoisecloud.wordpress.com/2011/04/25/the-bangalore-karaga-sons-of-draupadi/> (accessed November 15, 2011).

¹¹ Interview with Karaga participant, April 2011.

of the Karaga through the Pettah reconnects various parts of the area and its religious institutions and also visits what was once the fort area (as one of the temples visited by the Karaga lies outside the boundaries of the Pettah area) and a symbolic visit to the extinct tank of the area.

The route map is depicted in Fig. 5 highlights the sites of the Karaga in relation to other spaces in the Pettah area. The movement of the Karaga from one site to another marks what was once the boundary of the Pettah or City area. Slicing through various historical and religious periods, the Karaga marks a commemorative mnemonic to the past. With the Karaga visiting the four corners of the Pettah area and the shrine that marks the coming of a large Muslim population (during the time of Haider Ali and Tippu Sultan), underlines these periods and also highlights the axes that run through the Pettah area.

The movement and agglomeration of over twenty thousand to fifty thousand people within this space marks the performance as a powerful mnemonic for the city, its form and urban memory. In the process of this performance the participating population brings out spaces that have been long forgotten and rekindling of connection between body, memory and architecture takes place. Within the Pettah area, the working of architecture as a platform to experience various socio-spatial narratives is evident through the attachment to form. The rate of transformation¹² of the Pettah area, though fast, has left untouched certain spaces and behaviors that remain iconic of the space. The historic sites, the organic form of the Pettah and commemorative rituals in space reflect sites of the everyday where complex relations and interconnections between place, people and matter can be experienced. Echoing Arendt (1958: 96), who argues that the reality and reliability of the human world rests primarily on the fact that we are surrounded by things more permanent than the activity by which they were produced.

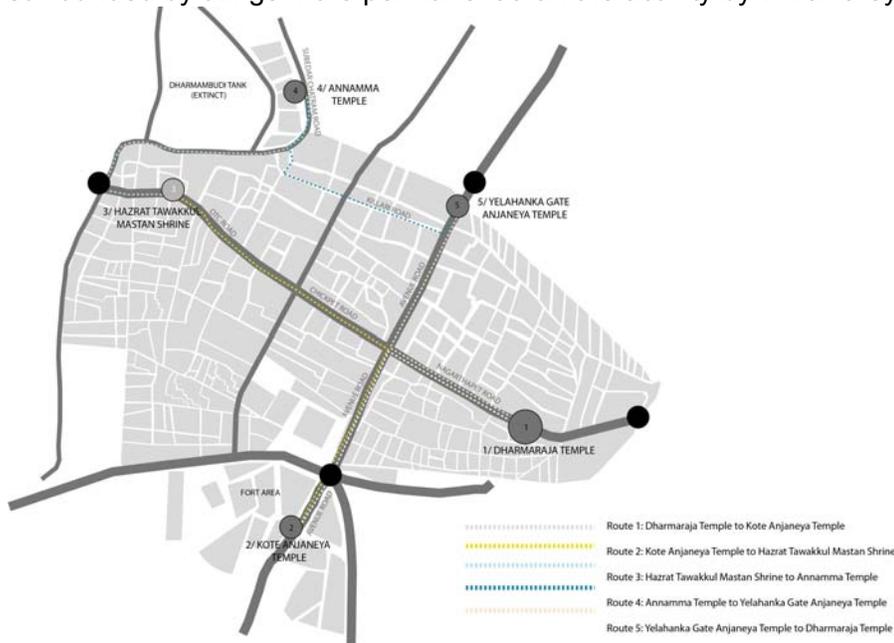


Fig. 5: Tracing the root of Karaga festival through the pettah. The exercise was carried out as a go along coupled with videography and extensive photography.

¹² There are plans for expanding roads, changing layouts to accommodate parking structures, etc. which raised objections throughout the city. Writes Chandrashekar Balachandran, Cultural Geographer and Founder of Dharani Trust in the city 'Change is inevitable, but history should not be lost. The cultural plurality and diversity can be seen in these areas. The Rice Memorial Church, Moinuddinn Darga and many ancient Hindu temples should remain untouched... if we lose our historical landscape, we lose the reminders of collected memory.'

The characteristics of the Pettah area are buried deep within the historic and commemorative mnemonics of space that aid the making of urban memory with the zone (and also contributing to the memory of the city in general). Continuing along the lines of Rossi's (1994) 'permanence's' within the city, the Pettah area contains 'this relationship between the locus and the citizenry then becomes the city's predominant image, both of architecture and of landscape, and as certain artifacts become part of its memory, new ones emerge'.

4. Conclusions

Various facets contribute to the representative nature of urban environments; history, collective memory, social behaviors and attachments, that go beyond the scope of its purely physical presence. Through the study of forms and morphological systems, observation of various actions and social practices, this paper expands on the need for innovative ways to study spatial narratives in constantly transforming environments.

The constructed empirical framework initiated the identification of potential sites of importance and narratives by studying the city as an evolution of various architectural forms and systems, where each system instituted certain morphological markers and characteristics contributing to the making of a particular site of importance or primary element. Architectural systems, forms and elements were studied as potential sites where in to discern and experience various socio-spatial narratives. By identifying elements and practices in the urban environment, the created framework encouraged the observation of narratives in space in a collective and individual, and institutional level.

The study drew out observations on social practices and lifestyles, place identity and attachment, rituals etc. providing insight into the constantly metamorphosing nature of ascribing symbolic value to a site. Primary elements were sites of important local narratives that were evolutionary rather than fixed and identified based on role, morphological characteristics and function rather than historic relevance alone. The active participation and shaping of urban environments through various social processes and influences, reflects the urgent need to study urban environments through frameworks that are interdisciplinary and qualitative.

The observations also demonstrate the role that everyday spaces play in globalizing environments. In a climate of rapid growth and constant change, spaces that accentuate identity, place-making and social representation need to be further analyzed, protected and studied.

Bibliography

- Arendt, H. (1958) *The Human Condition: A study of the Central Dilemma Facing Modern Man*, Chicago: University Of Chicago Press.
- Benjamin, W., Eiland, H., Tiedemann, R. and McLaughlin, K. (2002) *The Arcades Project*, Harvard University Press.
- Boyer, M. C. (1996) *The City of Collective Memory: Its Historical Imagery and Architectural Entertainments*, Cambridge: MIT Press.
- Castells, M. (1991) *The informational city: information technology, economic restructuring, and the urban-regional process*, Wiley Blackwell.
- Chakravorty, S. (2000) 'From Colonial City to Global City? The Far-From-Complete Spatial Transformation of Calcutta' in Marcuse, P. and Kempen, R. v., eds., *Globalizing Cities: A New Spatial Order?*, Oxford: Blackwell, 56-77.
- Choay, F. (1969) 'Urbanisme et semiologie' in Jencks, C. and Baird, G., eds., *Meaning in Architecture* London: The Cresset Press.
- Choay, F. (1986) 'Urbanism & Semiology' in Gottdiener, M. and Lagopoulos, A. P., eds., *The City and the Sign: An Introduction to Urban Semiotics*, Columbia University Press.
- Connerton, P. (1989) *How Societies Remember*, Cambridge, UK: Cambridge University Press.
- Eco, U. (1986) 'Architecture and Memory', *Journal of the Graduate School of Fine Arts*, vol. 8(Architecture and Literature), 89-94.
- Eisenman, P. (1982) 'Editor's Introduction' in Rossi, A., ed. *The Architecture of the City*, Cambridge: MIT Press, 3-11.
- Halbwachs, M. (1980) 'Space and the Collective Memory' in *The Collective Memory*, English Translation ed., New York: Harper Colophon Books, 131-132.
- Halbwachs, M. (1992) *On Collective Memory*, Chicago, Illinois: The University of Chicago Press.
- Harvey, D. (1989) *The Condition of Post Modernity*, Cambridge: Blackwell.
- Hasan, F. (1970) *Bangalore Through the Centuries*, Bangalore: Historical Publications.
- Jacobs, A. B. (1985) *Looking at Cities*, Cambridge: Harvard University Press.
- Jayapal, M. (1997) *Bangalore: The Story of a City*, Chennai (Madras): Eastwest Books Pvt. Ltd.
- Krishnamurthy, S. (2012) *Reading Architecture/Remembering/Forgetting Interplay: Development of a Framework to Study Urban and Object Level Cases*, unpublished thesis Bauhaus University.
- Lefebvre, H. (1996) *Writings on Cities*, Blackwell.
- Lefebvre, H. (1991) *The Production of Space*, Boston: Beacon Press.
- Lynch, K. (1992) *The Image of the City*, Cambridge: MIT Press.
- Mathur, A. and Cunha, D. d. (2006) *Deccan traverses: the making of Bangalore's terrain*, New Delhi: Rupa & Co.
- Nair, J. (2000) 'Beladide Noda Bengaluru Nagara!', *A collection of photographs from the project - Worlding the City: The Futures of Bangalore* [online], available: [http://www.cscsarchive.org:8081/Bangalore/home.nsf/\(docid\)/005C92052CB7E2A7E5256A2C003FC7A5](http://www.cscsarchive.org:8081/Bangalore/home.nsf/(docid)/005C92052CB7E2A7E5256A2C003FC7A5) [6 June 2012]
- Nair, J. (2005) *The Promise of the Metropolis: Bangalore's Twentieth Century*, New Delhi, India: Oxford University Press.
- Rao, B. N. S. (1985) *Bengalurina Ithihasa [A History of Bangalore]*, Bangalore: Vasanta Sahitya Granthamala.
- Rao, H. C. (1924) 'Derivation of the Name "Bangalore"', *Quarterly Journal of the Mythic Society*, 14(3), 238-40.
- Ravindra, A. (1996) *Urban Land Policy: A Metropolitan Perspective*, Concept Pub. Co.
- Rossi, A. (1994) *The Architecture of the City*, The MIT Press.
- Singh, R. L. (1964) *Bangalore: An Urban Survey*, Varanasi: Tara Publications
- Srinivas, S. (2004) *Landscapes of Urban Memory: The Sacred and the Civic in India's High-Tech City*, Hyderabad: Orient Blackswan.
- Stallmeyer, J. C. (2006) *Architecture and Urban Form in India's Silicon Valley: A Case Study of Bangalore*, unpublished Thesis University of California, Berkeley.

New Funding Options for Urban Renewal

Joe LANGLEY, SKM, Australia

1 Introduction

Australia is unquestionably a great place to live. The OECD Better Life Index ranked Australia near the top in 13 of 14 quality of life indices in its 2012 report (Organization of Economic Co-operation and Development 2012). In terms of overall life satisfaction, Australian's rated themselves 7th highest among 36 OECD countries, equal with New Zealand and ahead of Ireland, United Kingdom and the United States. For good reason, Australia has earned its reputation as "the Lucky Country".

Despite these favorable OECD rankings, Australia is experiencing growing pains that are seriously threatening its enviable quality of life. Due to its geography and settlement patterns, Australia's six widely dispersed mainland capital cities hug its coastal fringe and have absorbed a large portion of internal and external migration. Over the last decade, for example, Australia's two largest cities, Sydney and Melbourne, have attracted nearly 40 per cent of the country's population growth, yet housing production has not kept up with this pace (Major Cities Unit, p.16). Rising construction costs, aging infrastructure, protracted government regulatory processes and a cultural preference for low density living have conspired to drive up housing costs and push new housing production to the urban edges. "Since 1996, house prices in Australia have increased faster and for the longest period since 1880" and outright home ownership has dropped from 60 percent to 46% (Major Cities Unit, p.4). These trends have resulted in a seemingly endless cycle of urban sprawl, increasing worker commuting times and unsustainable demand for all forms of urban infrastructure.

State governments have belatedly responded by shifting their focus to urban renewal and public transport to address housing affordability and road congestion issues. In 2013, the New South Wales (NSW) state government created UrbanGrowth NSW from Landcom, the traditional greenfield land development agency. UrbanGrowth's new mandate is to unblock obstacles to housing within the existing metropolitan footprint by consolidating fragmented brownfield sites close to city centres. After years of resistance, Transport for New South Wales (TfNSW), the state's transport agency, is working with Sydney City Council to extend the Sydney light rail network opened in 1997 from 7.2km to 12.8km. A planned 13km extension will link southeastern suburbs, sports venues and the University of New South Wales with the CBD (Parsons Brinckeroff Australia Pty Ltd 2013). Similar schemes combining urban renewal and new light rail networks are in planning or implementation stages throughout Australia, including:

- East Perth urban redevelopment in Western Australia (WA) (East Perth Redevelopment Agency, 20008)
- Perth light rail network
- Gold Coast light rail project in Queensland
- Melbourne's grade separated junctions project in Victoria
- Newcastle urban renewal and light rail plan in NSW
- Sunshine Coast Council's light rail project in Queensland

While progress is being made by these and other initiatives, the cost and pace of retrofitting Australia's urban centres is far outstripped by the demands for housing and public transport. Urban renewal and public transport are inextricably linked, and the common obstacle confronting these schemes is funding. Infrastructure Australia's (IA) 2013 infrastructure

priority list includes 79 proposals with an estimated cost of over \$80 billion, representing the most productive investments needed to maintain Australia's competitive position in the global economy. Australia's competitiveness and the quality of life of its citizens will decline if these and other critical infrastructure investments are not made (Infrastructure Finance Working Group, 2012). Despite spending more than \$22 billion in transport infrastructure engineering and construction in 2009-10, IA projects that Australia has an infrastructure funding deficit of approximately \$300 billion (Infrastructure Australia 2012, p.6). There is simply not enough funding under current Commonwealth and state government arrangements to fill this funding gap.

A proven means of filling the gap in urban renewal and public transport funding can be found in greater involvement by the private sector and in reforms in the way funding is sourced. The Australia Bureau of Infrastructure, Transport and Regional Economics (BITRE) states that the Australian Government's investment in highways, interstate rail networks and urban public transport systems delivers a return of \$2.65 for every \$1 invested (Infrastructure Finance Working Group, p.1). This being the case, the Commonwealth Government and peak industry associations, including Infrastructure Partnerships Australia (IPA), the Property Council of Australia (PCA) and Consult Australia, have advocated the use of value capture funding methods to contribute to Australia's funding shortfall. Although used extensively in the North America for over 40 years and recently introduced to the UK, value capture methods are not well understood in Australia and have been studiously rejected by some state treasuries.

This paper examines the potential use of value capture to contribute to Australia's urban renewal and public transport funding shortfall. Obstacles and opportunities to this funding method are examined based upon recent pilot studies, government and private sector reports, and urban renewal and public transport projects proposed or under construction throughout the country. Successful value capture programs in North America are presented to illustrate how such programs could be implemented given Australian governance and legislative frameworks. Recommendations are made concerning how value capture methods should be considered and implemented in this country.

2 What is Value Capture?

2.1 Background

Value capture funding methods arose in California in the 1960s as a means of kick-starting urban renewal programs in economically depressed urban areas. Early state legislation required local government to classify these areas as "blighted" urban renewal districts as a precondition putting a value capture program in place. Specific projects and programs were then planned within the blighted district to attract new investment, housing and jobs. These programs were called Tax Increment Financing programs (TIF) because they were funded by the increase (increment) in local property tax revenue resulting from the renewal district improvement programs.

In the US, TIF programs allow local councils and development authorities to sequester increases in property tax revenues above a base year generated within the urban renewal district for a set period of time, usually 20 to 25 years. The sequestered funds are combined with traditional local, state and federal government funds, such as local public works budgets, development levies and state government grants, to fill funding gaps for predetermined urban renewal programs and projects. Complementary private sector housing and commercial developments are identified and actively promoted as part of the scheme. In most cases, TIF funding fills the gap between what the public sector can afford and what the private sector will invest, thereby serving as the catalyst for economic development. TIF

revenues underwrite bonds or loans which ensure stakeholders that key public elements of urban renewal programs will be put in place, demonstrating the public sector's commitment to the program and attracting complementary private sector investment.

TIF programs have evolved considerably over the past 50 years and now exist under state enabling legislation in 49 of the 50 US states and the District of Columbia (Council of Development Finance Agencies, p. 1). It is the most widely used local government program for financing economic development in the US (Briffault 2010). TIF programs are also legislated in Canada and Puerto Rico. In 2012, the UK government introduced TIF legislation which allows local authorities to borrow against future growth in business rates to fund infrastructure, attract private sector investment and create jobs. The UK Government initially earmarked £150 million for TIF projects from 2013-14. A program focusing on four key development sites in Newcastle and Gateshead Councils using the TIF scheme is expected to initiate "a £92 million investment programme, creating 2,000 permanent jobs within five years, and 13,000 within 25 years"(Sanford 2013).

2.2 Definition

There are a number of funding models in use in Australia and internationally to contribute to urban infrastructure and transport planning, and each has advantages and disadvantages that must be tailored to local circumstances and objectives. A Canadian study on smart growth identified 15 different funding methods currently used in North America (Tomalty 2007). Over-use or misapplication of any of these methods can have unintended consequences and have actually discouraged complementary private sector investment. Over-reliance on upfront development levies in NSW is widely acknowledged as having stalled economic growth, diminished housing affordability and reduced employment in the mid to late 2000s (Allen Consulting Group 2003)(O'Flynn 2011). These findings forced the NSW government to reduce upfront developer levies by \$64,000 per lot (NSW Department of Premier and Cabinet 2008). Clearly, understanding how various funding models work is critical in implementing effective urban renewal programs.

In Australia and New Zealand, the value capture funding model is not well understood and has taken on a variety of meanings, not all of which are consistent or appropriate. This can result in less effective program design, delayed implementation or premature rejection of value capture as a potential funding method for urban renewal and transport projects. For example, a report for the New Zealand Transport Agency incorrectly defines value capture mechanisms as user charges applied to recover general funds, and concludes that only *perceived* benefits would be recovered from its use (Kemp et al. 2012). Lessons learned from the Gold Coast light rail project in Queensland include the need to clearly articulate what value capture is to key stakeholders and to develop a robust and early stakeholder consensus based upon non-transport "city building" objectives (Gold Coast Rapid Transit 2012). The funding shortfall is too great to limit viable options due to poor design and a lack of understanding. It is therefore important to clearly define what value capture methods are and how they are best implemented, or risk limiting their effectiveness or missing the opportunity to use them altogether.

For the purposes of this paper, value capture refers to funding methods that are closely tied to increases in public tax revenues from private property. The method relies on establishing a revenue benchmark prior to program commencement that can be monitored against specific planned investments in transport infrastructure and urban renewal. Revenues above the benchmark are then sequestered into dedicated accounts and used to repay bonds or loans which fund projects and programs, while revenues below the baseline continue to flow to taxing authorities. Examples of potential value capture revenue streams include;

- Improved property values resulting from infrastructure investments, land rezoning, and density controls

- Increases in property transfer taxes, local government rates, business rates, land taxes and related local government charges
- Sale of additional development rights over and above those permitted under existing zoning, also called sale of “bonus floorspace”
- Sale of under-utilised government land beside public transport corridors and stations
- Sale of air rights over public land and transport corridors and stations.

2.3 How is value created and captured?

Numerous studies demonstrate that well-planned urban renewal programs which integrate land use and transport infrastructure produce significant increases in land values. A 2006 study of 89 TIF districts spread across 67 municipalities in the Chicago metropolitan area found that mean annualised property values in TIF districts increased by 35% between 1983 and 1993, compared with a 6% increase in overall municipal property values (Byrne, P 2006). Industrial and CBD districts experienced the highest median increases, growing by 32% and 26%, respectively. These increases are caused by improved access to jobs and housing, more efficient and productive uses of land and infrastructure, and the ability of employers and employees to specialise to produce high value services and products.

Value capture programs provide an equitable means of reinvesting a portion of the benefits created by urban renewal and transport infrastructure programs. The chart in Figure 1 provides an illustration of the TIF conceptual funding model, which is the basis of value capture. The key features of the model are:

- Focuses on generating funds from *incremental* revenues above a predetermined baseline, as opposed to imposing additional upfront costs on development
- Establishes a clear nexus between public infrastructure investment and the captured revenue sources
- Captured revenue streams are dedicated to repayment of specific public infrastructure projects and programs for a set timeframe, typically 20 to 25 years
- Full revenue stream is returned to original taxing authorities at the end of the repayment period
- Captured revenue streams provide a long term source of revenue to underwrite loans and / or bonds which fund initial infrastructure and urban renewal investments

2.4 Common Uses of Value Capture Funds

Uses of TIF funds in the US vary from state to state depending upon enabling legislation. The most common uses of funds are:

- Studies, surveys and plans of existing land uses and infrastructure assets
- Professional services, such as architectural, engineering, legal, property marketing and financial planning
- Property acquisition and site consolidation
- Demolition and site preparation
- Rehabilitation and renovation of existing buildings
- Construction of new or improvements to existing infrastructure
- Affordable housing programs for new or displaced residents.

- Enhanced security services, job training program and day care services to promote employment opportunities for low income residents
- Relocation costs for businesses or residents affected by redevelopment

While not all of these uses would be appropriate in the Australian context, they demonstrate the flexibility of value capture programs in addressing local needs in the US system.

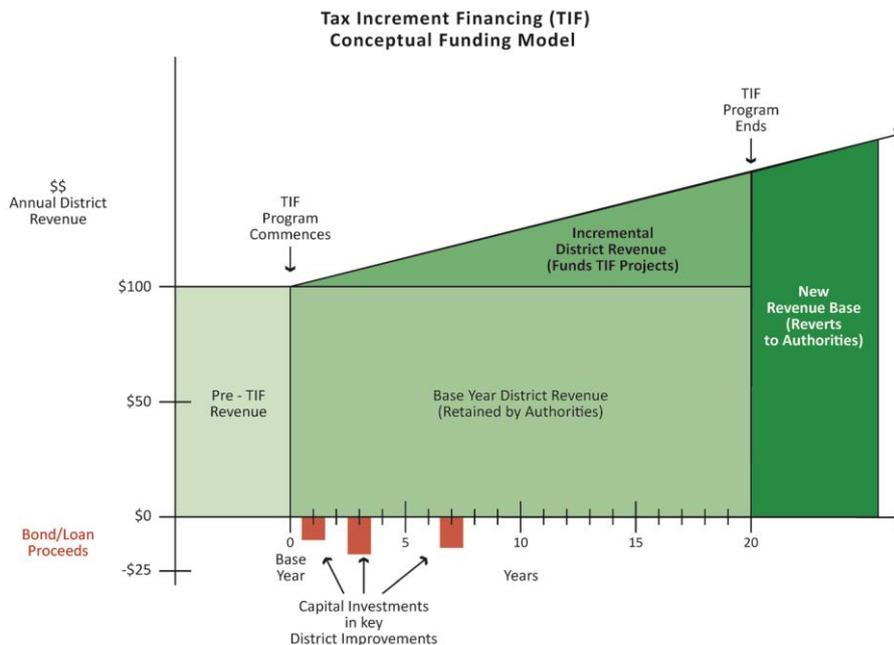


Figure 1: Tax Increment Funding Model

Source: SKM

3 10 Key Success Factors

Experience with public – private partnership programs in Australia and internationally demonstrates that a number of important factors are essential in successful value capture programs. Ten key factors are outlined below as a prelude to identifying the opportunities and obstacles to the use of value capture methods in Australia.

3.1 Develop a comprehensive, long term plan

Value capture programs typically rely on the successful implementation of a number of mutually supportive and coordinated public and private investments to lift economic activity over a sustained period. As was found in the Gold Coast light rail example, city building must be a key driver that extends a project's objectives "beyond its transport function" to embrace high quality, higher density, mixed uses (Gold Coast Rapid Transit 2012). The absence of a comprehensive, long term strategy at the start of stakeholder consultation was later recognized a weakness in the Gold Coast light rail network by its proponents, resulting in missed opportunities for fully leveraging the benefits of the network. These strategies also need to extend 20 or more years into the future so that the benefits of a fully mature program, which tend to occur at its back end, can be captured to underwrite financing.

3.2 *Embrace genuine and robust stakeholder consultation.*

Stakeholder consultation has evolved into an established and essential component of public transport and urban planning programs at the national, state and local levels in Australia. The NSW government recognizes this by mandating four levels of stakeholder consultation in new draft planning legislation, with separate and independent consultation required at the strategic, regional, sub-regional and local levels (NSW Government 2013). The Urban Land Institute recommends that such programs consider a full spectrum of participation, as developed by the International Association for Public Participation. This will ensure that differing needs of community interests groups for different levels of information will be addressed and regulatory delays can be avoided (Corrigan 2005).

3.3 *Carefully select the improvement district*

Successful value capture districts in North America vary from small downtown improvement districts in rural communities covering several city blocks to large industrial precincts covering hundreds of hectares, such as the 345 ha Pilsen industrial TIF district in Chicago (Trkla, et al 1998). In setting the boundaries of an improvement district, consideration needs to be given to the nature and cost of physical improvements needed to create value uplift, catalytic projects that are likely to kick-start development activity, and the attitudes of business and residential property owners to the proposed activities. Assuming financial objectives can be met, it may be better not to include staunch opponents in the scheme in order to keep the program moving forward smoothly. Once the program's success is evident, attitudes may change and boundaries can be extended.

3.4 *Create a shared vision*

A shared vision involving all stakeholders requires building early consensus among residents, property owners, community groups, hospitals, educational institution, employers and businesses, even those opposed to the scheme. A widely scoped stakeholder consultation program involving all stakeholders and the media will assist in getting the message out and building alliances (Corrigan 2005). It is far better to have robust debate and informed opponents than an information vacuum and misinformation about the program.

3.5 *Establish a clear and balanced governance framework*

Value capture programs rely on establishing and maintaining good will among a wide range of public and private interest groups. Government agencies and commercial interests invest hard capital to create value, but as a form of public – private partnership operating within a democratically elected system of government, the success of these programs often relies heavily on the non – financial contributions and support from other interests, such as neighborhood associations, educational institutions, local health and social service agencies and various other special interest groups. This often requires a widely supported and collaborative process, and mechanisms to provide appropriate involvement from all groups, such as the use of task forces, facilitators and intermediaries (Corrigan 2005).

3.6 *Understand the risks and rewards for all stakeholders*

The high profile failures of several large public – private transport projects in Australia, including the Cross City Tunnel (\$700 million) and Lane Cove Tunnel (\$1.1 billion) in Sydney and the Clem7 (\$3.2 billion) and Airport Link (\$4.8 billion) in Brisbane, highlight the need for all parties to understand the risks and rewards of public – private projects. Although unsustainable toll revenues in each instance were a major factor, community opposition, pressure on proponents to inflate traffic volumes and unpopular road closures and diversions by transport agencies also contributed to these failures. Such failures cost private sector investors lost billions of dollars, but the general public also loses because future opportunities to involve much needed private sector investments will be more costly and

harder to secure. Understanding and valuing the risks and rewards of all stakeholders is therefore critical in public – private projects.

3.7 Use incentives to attract private investment and better design

Local government planning and development controls are increasingly turning to incentives rather than prescriptive standards to achieve better development outcomes and reduce costs. For example, the NSW Government is following the lead of Queensland and Victoria in moving to merit assessment processes supported by development guidelines in urban renewal areas to enable greater innovation in design, reduce approvals timeframes and lower costs (NSW Government 2013). Incentives such as reduced car parking requirements near public transit stations can significantly improve housing affordability and encourage public transport ridership. Specifically- tailored precinct zoning and development controls, such as planned unit developments (PUD) and transferable development rights (TDR), are often required to achieve higher density residential and commercial development while maintaining public open space standards. These and other incentives should be explored and encouraged.

3.8 Secure consistent and coordinated leadership

Studies of high speed railway stations in Europe and Asia found that a major factor in successful station precinct development programs is the presence of strong and consistent local leadership (AECOM 2013). Persistent local leadership by Mayor Clover Moore was a major factor in overcoming NSW government resistance to the Sydney light rail extension currently being delivered. While political leadership is important, sustained leadership that transcends administrative and political change and maintains a consistent vision for the project is essential given the long term nature of urban renewal and public transport investments.

3.9 Secure the ability to influence outcomes

A major obstacle in urban renewal programs is land fragmentation. In Australia, local and state government agencies have the power of compulsory acquisition, but this tool is used sparingly due to limitations in the ability of the agency to repackage and resell the land for other than narrowly defined public uses. In NSW for example, the compensation payable is based upon the market value of the property, disregarding increases in value caused by the carrying out or the proposal to carry out a public purpose (Land Acquisition (Just Terms Compensation) Act 1991). Lack of clear authority by Parramatta City Council under NSW law to acquire private land for redevelopment resulted in a four year delay of Civic Place, a major urban renewal project. Planning controls and compulsory acquisition powers need to provide urban renewal authorities with the ability to undertake widespread urban renewal programs where necessary or desirable in the broader public interest. The ability to repackage and sell land varies by jurisdiction, so it is important to obtain current and accurate legal advice on any limitations that may exist on land acquired through compulsory acquisition.

3.10 Build trust as a core value

Trust is an overriding value in public – private partnerships. Building and maintaining trust can be established through small efforts that evolve into larger efforts but require continual effort and commitment to be maintained. Other factors already discussed, including genuine stakeholder consultation and clear and balanced governance, are mutually supportive of this value (Corrigan 2005).

4 Obstacles and Opportunities for Value Capture in Australia

Value capture methods have been a subject of some discussion but little concrete action in Australia for many years. Given the overwhelming level of its success in other countries and

the significant need for new sources of funds to maintain economic prosperity and productivity, why hasn't value capture been implemented in Australia?

This section examines the major obstacles to its acceptance and identifies some of the benefits to its implementation in Australia. Since there are no existing programs to evaluate and little critical research on this subject in this country, these observations are drawn from the personal experiences of the author based upon 30 years in property development and urban planning consultancy in Australia, New Zealand and the United States.

4.1 *Institutional Resistance to Hypothecation*

Obstacles. Perhaps the biggest obstacle to value capture in Australia is institutional resistance by Commonwealth and state treasury officials. Public treasury officials don't like the idea of hypothecating future revenue streams for any purpose. Discussions with current and former treasury representatives generally produces a list of potential drawbacks, some of which are valid but others which are due to a misunderstanding of the method or an apparent professional bias against this approach. These views persist in government after years of effort by professional associations, academics (McIntosh 2011) and knowledgeable practitioners urging government treasuries to give serious and objective consideration to this funding model.

Opportunities. The weight of government opinion has recently shifted as government bodies such as IA and the Department of Infrastructure and Transport's Major Cities Unit have tallied up the national backlog of infrastructure investment, highlighted housing affordability and production problems, and forecast a decline in national productivity. Initiatives are either underway or recommended for Commonwealth and state treasuries to examine how value capture funding can help solve these problems. Examples include:

- The Commonwealth Government's study into high speed rail concluded that value capture programs could generate significant revenue and productivity gains if coordinated with a comprehensive urban renewal program around Sydney's Central Station (AECOM 2013).
- The Victorian Department of Treasury and Finance engaged technical advisors in April 2013 to provide advice on a value capture initiative to fund a reconfiguration of grade-level train crossings in commercial centres in Melbourne.
- IA has rated the \$4.4 billion Brisbane Cross River Rail project "ready to proceed" in its June 2013 national infrastructure report subject to an independent review of its land value capture proposal (Infrastructure Australia 2013).
- In May 2013, the NSW Parliament's Standing Committee on Transport and Infrastructure instructed the NSW Treasury to "examine ways to implement value capture mechanisms for transit oriented development precincts, in order to generate funding for future infrastructure projects" (Legislative Assembly Standing Committee on Transport and Infrastructure 2013).
- The Western Australian Department of Transport is studying the use of value capture funding methods to support implementation of its MAX light rail network.

These new initiatives are very promising. However, they do not have an overarching national perspective or coordination that would allow the sharing of research and findings into this method.

4.2 *Value versus Cost of Renewal*

Obstacles. A fundamental characteristic of this funding model is its focus on the *value* created by a public sector investment as opposed to the *cost* of the investment.

Many public and private sector practitioners in planning, finance, property and economic development assume that development levies, betterment taxes and other imposts are value

capture methods if they are applied to properties or areas experiencing value uplift. While such levies should be considered and if appropriate applied to an urban renewal or transport precinct, they rarely if ever are applied in a manner that reflects differences in the value uplift from one property to another.

The Gold Coast light rail funding model, for example, applies a flat rate to all properties equally within a defined transport district. This is certainly a valid method for generating funding, but a property owner next door to a light rail station under this system is charged at the same rate as a property owner some distance from the station. Windfall profits can be made in these cases by property owners or speculators. In effect, property owners farther away from the station subsidise the property value increase of those closer to the station.

Opportunities. Under a value capture method, revenue streams are primarily captured from incremental growth in public revenue streams that are directly attributable to the investment, such as a light rail station or public domain improvements. Examples of revenue streams which would increase as a result of these investments include:

- Recurring revenue, such as state and local taxes, stamp duty and development levies
- Non-recurring revenue, such as the sale of government assets (surplus land) or development rights (air rights, bonus zoning).

In setting up a value capture funding scheme, the sponsoring agency, such as an urban renewal authority, works with all stakeholders and taxing authorities to decide what projects or programs will be funded under the model, what revenue streams will be captured, to what extent and for how long. An agreement is reached to sequester those public revenue streams into special purpose funds to pay for specific projects and programs. These characteristics provide a degree of consultation, transparency and long term commitment that is not widely practiced in public sector spending.

4.3 *Gross Benefits versus Net Benefits*

Obstacles. Some observers object to value capture on the grounds that growth within a value capture precinct will draw commercial activity, jobs and housing from other areas. They argue that these schemes don't create value within a wider region, they simply move economic activity from one neighborhood, precinct or municipality to another.

Opportunities. This is a frequent criticism of TIF programs in the US, where few states have state – wide land use planning and local governments compete fiercely at times for commercial and residential development to increase their tax bases. This objection is valid in the US, but it fails to acknowledge a number of pressing problems in Australia's capital cities, including housing production shortfalls, the need for more efficient land use patterns and declining economic productivity.

Housing production in NSW in particular has been chronically weak for many years and housing affordability has declined significantly as a result. A 2009 study reported that the underlying demand for new dwellings in the State was around 50,000 per year, but new housing was 31,500 in 2007/08; 24,600 in 2008/09; and 31,000 in 2009/10 (BIS Shrapnel 2008, p.16). This represents a shortfall of nearly 20,000 new dwellings per year. An increasing proportion of families are unable to afford to purchase a home, in spite of government efforts to reduce costs through stamp duty relief and other concessions. Australia needs more and cheaper houses everywhere.

Well-planned urban renewal provides more efficient and productive uses for urban land. The NSW Government created UrbanGrowth in 2013 and has focused its role on unlocking stalled housing production on low density, fragmented brownfield sites. UrbanGrowth will do this by working across government agencies to consolidate land in urban activation precincts for higher density development served by improved public transport. By providing a new source of funds for UrbanGrowth, value capture programs will contribute to improved land use efficiencies, a frequently stated national and state planning objective.

In its *2013 State of Australian Cities* report, the Commonwealth Government's Major Cities Unit identified a decline in national productivity from previous years as a key issue. Industrial sectors experiencing increasing productivity are "located in city centres and rely on increasing job densities to drive productivity" (Major Cities Unit 2012). This finding highlights the need for greater density and improved public transport to maintain Australia's global competitiveness. Value capture programs are designed to address the need for higher density, transit – oriented development to improve national productivity.

4.4 Council Financial Capacity

Obstacles. The financial capacity of local government in Australia is frequently cited as a reason for the declining quality of urban centres. Councils, it is claimed, are hampered by high operating deficits, restrictions on borrowings and infrastructure backlogs.

Opportunities. Limitations on local councils' management and financial capacities are real but solvable problems. A 2013 report by the NSW Treasury Corporation (TCorp) found only 54% of local councils in the State achieved a financial sustainability outlook of moderate or better, and that 46% were weak, very weak or distressed (NSW Treasury Corporation 2013). Solutions to these shortcomings include improved management training and skills, better long range planning, and more productive use of financial assets. For example, some councils have low or no debt and strong cash flow, but large infrastructure backlogs. The report recommends that local government make more effective use of borrowing and debt management to improve financial performance. Urban renewal programs undertaken in accordance with this research paper are well aligned with TCorp's recommendations and would provide the economic development underpinnings for improved financial health of many councils.

4.5 Use of Debt

Obstacles. Government agencies at all levels are justifiably resistant to assuming unsustainable debt and are well advised to be prudent financial managers. The requirements to maintain AAA credit ratings and limit consolidated state government financial obligations are common arguments against value capture programs.

Opportunities. The most effective urban renewal programs use value capture to bridge the gap in the timing between investments in public infrastructure and the flow of tax revenue resulting from those investments. They supplement, but do not replace, existing funding sources, such as Commonwealth and state grants, development levies and rates revenue. Large early lead-in public infrastructure investments, such as transport interchanges, public domain improvements, land consolidation and urban drainage systems are common uses of these funds. These investments, if properly planned and implemented with other public and private sector investments, create long term social, economic and financial benefits for government that increase public revenues (GFOA Executive Board 2008). They also provide a clear commitment and needed catalyst to investment for the private sector, and serve to de-risk public and private financial underwriting.

Financing for key program elements could be arranged through short term treasury guarantees until revenue sources stabilise, or through infrastructure bonds issued and administered through state financing bodies, such as TCorp. Bonds with varying maturities and risk levels can be matched with appropriate program elements and investor needs. Once revenues from program elements are stabilised, the bonds can be retired and funds recycled for other projects and programs. Strong bond underwriting standards administered by TCorp and ASIC would provide the financial rigor needed to attract institutional and retail investors, allowing small superannuation funds to tap into a new investment vehicle (PricewaterhouseCoopers 2008).

5 Denver Union Station Redevelopment Case Study

The Denver Union Station redevelopment project (DUS) is a \$500 million public – private partnership formed to create a modern multi-modal transport hub and urban renewal precinct in Denver, Colorado in the United States. The project was approved Denver voters in 2004, and will be completed in 2014 (Denver Union Station Project Authority 2008). The project's major transport elements are:

- An eight track commuter rail station connecting Denver international airport, the national passenger line (Amtrak), and the cities of Boulder and Golden.
- A three track light rail station connecting to the southeast, southwest and west lines
- 22 bay regional bus facility
- Free CBD shuttle bus

The public infrastructure components are being developed by a dedicated, special purpose public transport and renewal authority, which will hand over the transport elements to existing transport agencies upon their completion and will be dissolved. Two private sector property development consortiums will develop five parcels within the 20 ha improvement district. The development will contain 125,400 square metres (1.35 million square feet) of retail, residential, hotel and commercial office uses with heights up to 61 metres (200 feet). A 685 space parking garage is also provided in the master plan (Denver Union Station Project Authority 2008, p.35).

A key feature of the redevelopment is the renovation and reuse of Denver's historic Union Station constructed in the late 19th century. The station will be the focal point of an extensive public domain connecting the precinct to nearby sports stadia, the "LoDo" entertainment precinct, central business district and the Platte River open space network.

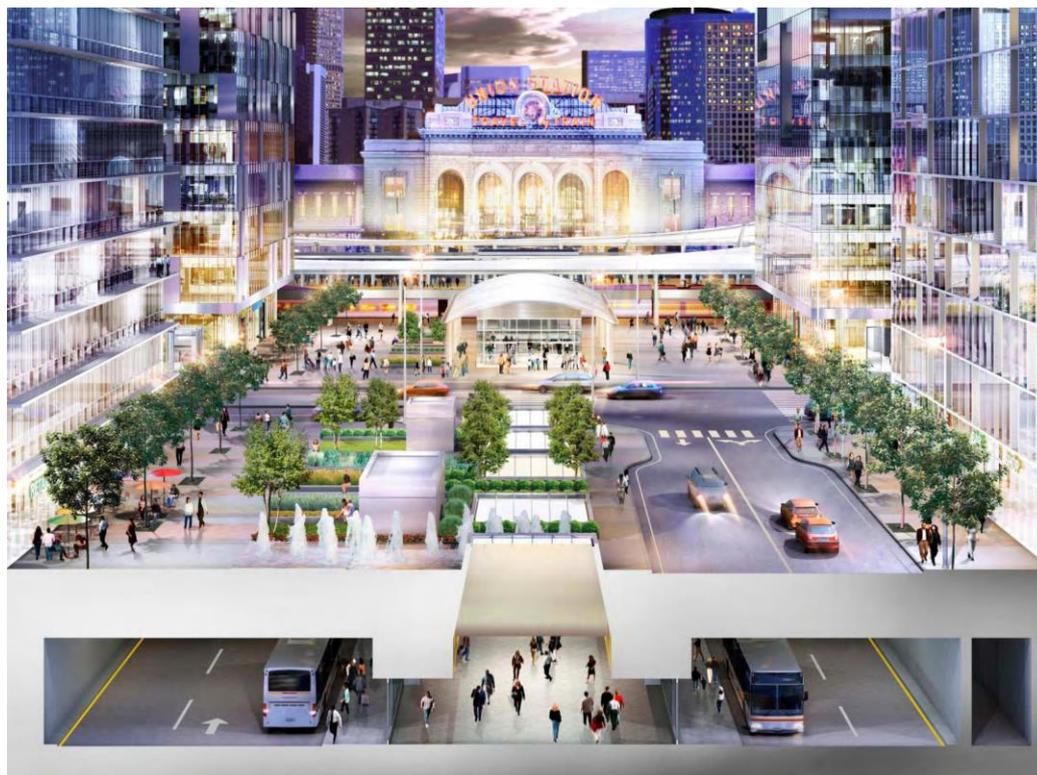
Funding for the transport elements is provided by a combination of federal and state government grants, loans and local tax increment financing. Sources of funding and repayment are shown in the Table 1 below.

Funding	\$M	Repayment	Terms
Federal & State Grants	\$109.30	Loan Repayment	\$165M - \$12M/pa, 15yrs, 5.65%
Property sales	\$37.40	TIF revenue	\$135M for 30 yrs.
<u>Federal Loans</u>	<u>\$300</u>	Loan guarantee City of Denver	Up to \$8M/pa to cover shortfalls TIF revenue
Total	\$446.7M		

Table 1: Denver Union Station Redevelopment Funding and Repayment

Sources: Denver Union Station Project Authority

A key enabling source for funding DUS is the US Transport Infrastructure Finance and Innovation Act (TIFIA) program. This program provides up to \$10 in credit assistance for each dollar of Federal funds for state and local transport infrastructure investments. TIFIA allows projects using TIF and other innovative funding sources to secure favorable financing rates in the private market during early "ramp-up" periods for new projects (Department of Transportation 2012). DUS embodies the 10 Key Success Factors described in Section 3, and provides a working model for urban renewal and transport infrastructure projects.



*Figure 2: Denver Union Station Redevelopment
Image source – Denver Union Station Project Authority*

6 Conclusions and Recommendations

Value capture methods have provided an equitable, transparent and prudent means of supplementing traditional sources of government and private sector funding for urban renewal and transport infrastructure in the North America for over 40 years. Studies in Australia by government agencies (AECOM 2013), industry associations (PricewaterhouseCoopers 2008) and academic institutions (McIntosh 2011) support the introduction of this funding model. There are few legislative or regulatory barriers that would prevent value capture methods from being implemented now on a limited scale at the state and local levels. There are significant public benefits, commercial opportunities and national productivity gains that would arise from more systematic structural and legislative reforms in support of value capture methods at federal, state and local levels.

On the basis of the research undertaken for this paper, it is recommended that:

1. The Commonwealth Government should take a stronger leadership role in the development of Australian cities, such as through the establishment of an urban infrastructure fund and the strengthening of the Major Cities Unit (Urban Coalition 2013).
2. There is a pressing need for the Commonwealth to coordinate the various initiatives underway and planned on value capture research, funding and financing, procurement and implementation. This should include the development of national guidelines and standards, and co-funding pilot studies of planned urban renewal and public transport programs in the states.
3. Commonwealth and state treasuries and other relevant agencies should act on market innovations and reforms which support value capture and other initiatives to reduce Australia's infrastructure backlog, such as those proposed by IA in its 2013 *National Infrastructure Plan*.

4. State treasuries should take a proactive role in supporting financial and regulatory innovations and reforms which are being pursued by their sister agencies in the areas of urban planning, urban renewal and public transport.
5. State and local agencies should investigate how value capture methods can be applied as part of metropolitan land use planning, transport planning and urban renewal programs.

References

- AECOM 2013, *High Speed Rail Study Phase 2 Report*, Department of Infrastructure and Transport, Commonwealth of Australia, Canberra.
- Allen Consulting Group 2003, *Funding Urban Public Infrastructure – Approaches Compared*, Property Council of Australia, Sydney.
- BIS Shrapnel 2008, *Kickstart NSW: Economic Impact of Temporary Removal of Stamp Duty on New Dwellings in New South Wales*, Property Council of Australia, Sydney.
- Briffault, Richard 2010, "The Most Popular Tool: Tax Increment Financing and the Political Economy of Local Government", *The University of Chicago Law Review* (2010): 65-95.
- Byrne, Paul F 2006, "Determinants of Property Value Growth for Tax Increment Financing Districts", *Economic Development Quarterly*, Vol. 20 No. 4.
- Corrigan, Mary Beth, J Hambene, W Hudnut III, RL Levitt, J Stainback, R Ward, N Witenstein 2005, *Ten Principles for Successful Public/Private Partnerships*, ULI-the Urban Land Institute Washington D.C.
- Council of Development Finance Agencies 2009, *Advanced Tax Increment Finance Reference Guide*, Council of Development Finance Agencies, Chicago.
- Denver Union Station Project Authority 2008, *Denver Union Station Master Plan Supplement*, Denver Union Station Executive Oversight Committee, Denver.
- Department of Transportation, *TIFIA Credit Program: An Introduction*, US Federal Highway Administration, Washington, DC.
- East Perth Redevelopment Agency June 2008, *The Link Masterplan*, East Perth Redevelopment Agency, Perth.
- GFOA Executive Board 2008, *Best Practice – The Role of Master Plans in Capital Improvements Planning*, Government Finance Officers Association of the United States and Canada, Chicago, Illinois.
- Gold Coast Rapid Transit 2012, *Making a good project, a great project, A Critical Retrospective*, Queensland Department of Transport and Main Roads, Brisbane.
- Infrastructure Australia June 2013, *National Infrastructure Plan*, Commonwealth of Australia, Canberra.
- Infrastructure Finance Working Group 2012, *Infrastructure Finance and Funding Reform*, Infrastructure Australia, Canberra.
- Kemp, A, V Mollard and I Wallis 2012, *Value capture mechanisms for funding transport infrastructure*, NZ Transport Agency research report 511.107pp, Wellington.
- Land Acquisition (Just Terms Compensation) Act 1991 No 22.*
- Legislative Assembly Standing Committee on Transport and Infrastructure 2013, *Inquiry into Utilisation of Rail Corridors – NSW Government response*, NSW Parliament, Sydney, p. 5.
- McIntosh, James 2011, *Discussion paper – Alternative Funding Mechanisms for Public Transport in Perth: The Potential Role of Value Capture*, Curtin University Sustainability Institute, Perth.
- Major Cities Unit, Department of Infrastructure and Transport, Australian Government 2012, *State of Australian Cities 2012*, Commonwealth of Australia, Canberra.
- NSW Treasury Corporation 2013, *Financial Sustainability of New South Wales Local Government Sector – Findings, Recommendations and Analysis*, NSW Government, Sydney.

NSW Department of Premier and Cabinet 2008, *Premier announces plan to kick-start housing construction*, NSW Department of Premier and Cabinet (17 December 2008), Sydney.

NSW Government 2013, *A New Planning System for NSW*, Sydney.

NSW Parliament 2013, *Summary of the Exposure Planning Bill White Paper*, Sydney.

O'Flynn, Louise 2011, *History of development contributions under NSW planning system*, NSW Parliamentary Library Research Service, 3/2011, Sydney.

Organization of Economic Co-operation and Development 2012, *OECD Better Quality of Life Index Tables*. Available from: <http://stats.oecd.org/Index.aspx?DataSetCode=BLI>. [11 Jul 2013 17:34 UTC (GMT)].

Parsons Brinckerhoff Australia Pty Limited 2013, *CBD and South East Light Rail Project State Significant Infrastructure Application Supporting Document*, Transport for NSW, Sydney.

PricewaterhouseCoopers 2008, *Tax Increment Financing to fund infrastructure in Australia – Final Report*, Property Council of Australia, Sydney.

Sandford, Mark 2013, *Tax Increment Financing*, House of Commons Library, Standard Note: SN/PC?05797, London.

Tomalty, Ray 2007, *Innovative Infrastructure Financing Mechanisms for Smart Growth*, Smart Growth BC, Vancouver.

Trkla, Pettigrew, Allen & Payne Inc. 1998, *The Pilsen Tax Increment Financing Redevelopment Project and Plan*, City of Chicago Illinois.

Victorian Department of Treasury and Finance 2013, Unpublished request for proposal

Urban Coalition 2013, *A New Deal for Urban Australia*, The Urban Coalition, Sydney.

Valuing service and retail structures in core areas of cities

Sławomir Ledwoń, PhD, Architect, Gdansk University of Technology, Poland

1. Introduction

Contemporary, rapid changes in cities create the need to evaluate and protect its existing structure. Many elements are analysed and evaluated. Built structure, urban and architectural heritage, historical landmarks, scarcity of environmental assets are all very precious. But what is also natural to the centre itself are its functional features. One of them is retailing. Over time services have been exposed to many pressures. New shopping centres built outside cities aided sprawl, and this sprawl created demand to build new centres. Apart from that more of the public space and social activity has moved to virtual space – communication over distance sometimes seems easier than in close proximity. In this case “traditional” urban activity is also an asset of the city core. What stimulates that are vibrant high streets. Over time retail formats are also changing. Competition from virtual space is competitive to traditional brick and mortar outlets, these also adapt and change to face new demands. All these create new circumstances to plan new retail and service networks and look differently at their role in cities.

The article describes the methodology for identifying, surveying and evaluating existing city centre’s service and retail structure – using a specially designed Android phone application developed by the author. By recording information about spatial location of services that is combined with basic information about their types a database is created. This method also introduces an innovative smartphone application that aids surveying, which is also described in the article. Based on this data an assessment of the core structure can be made that illustrates the spatial distribution of different outlets.

2. Statistical retailing data

In Poland, the main institution responsible for collecting statistical data is Central Statistical Office (Główny Urząd Statystyczny – GUS). It is a governmental organisation that is surveying, analysing and publishing various data. Most of this data is publicly available.

In terms of retailing some data is collected on national and regional level. According to the official Central Statistical Office definition a shop is a “permanent retail trade point, with a designated space with shop window and interior accessible for clients”. This can be a single entity or one of many outlets of one retailer. When a part of a larger space is rented by a smaller merchant – it is also treated as a unique service point.

Apart from that there are two other classifications. The first one is their industry type (or prevailing type of industry in total sales) and their sales area. According to Central Statistical Office (GUS), shops are divided into basic business/industry classes:

- with major share of fast moving consumer goods (FMCG),
- department stores with broad range of products,
- specialised shops,
- factory shops (incl. factory warehouses and outlets),
- pharmacies and petrol stations,
- markets and mobile sales points.

When classifying according to sales area there are two basic groups. The first group are shops with prevailing FMCG sales. These are hypermarkets (above 2 500 sq m sales area),

supermarkets (400-2 499 sq m) , general shops (120-399 sq m) and other shops (below 119 sq m). The second group are shops with broad and diverse product range. These are department shops (above 2 000 sq m) and merchants' shops (600-2 000 sq m).

According to GUS shops are also divided by the prevailing range of goods sold. This could be:

1. grocery,
2. fruit and vegetables,
3. butcher's,
4. fishmonger's,
5. bakeries,
6. liquor shops,
7. cosmetics and toiletries,
8. textile,
9. clothing,
10. shoes and leather,
11. furniture and lighting,
12. radio, television and household appliances,
13. stationery and book shops,
14. mechanical vehicles,
15. other shops.

The official data Central Statistical Office (GUS) does not allow for detailed analysis of retail network. This is mainly because the data is available only in aggregated form, meaning that there are only total numbers for the whole voivodship area, which in Poland is the equivalent of state in other countries. None of this is georeferenced. There is more detailed data, but that is available only for purchase. Data is also stored in other registers, but these use different codes (e.g. PKD 2004, PKD 2007 – Polish National Codes for Business), depending on the time they were collected. And the link to spatial location is through the registration address of the business, not the sales venue.

The above classifications show, how they can be diverse and differ between each other, depending who is surveying and what is the main concern of data collection. As the main interest of the spatial analysis is in retail, the basic analysis collected classes are narrowed down. In the methodology described in this article the surveyed data is classified in division to main types. These are grouped in 30 main classes, and then break down into subclasses that total for 103 categories. Then these are aggregated for basic analysis into 12 main types as follows:

- A. food – shops with food shops, including specialised shops (e.g. meat shops, baker's, liquor shops),
- B. fashion – shops with clothing, cloths, fabrics, lingerie, etc.,
- C. multimedia, press, books, gifts – shops in the multimedia section, press books, gifts, including computers, phones and television,
- D. health and beauty – shops with health care products, beauty, including cleansers and pharmacy,
- E. accessories, jewellery, watches – shops with accessories, jewellery, watches and luxury items,
- F. sport and recreation (shops) – shops with items for sport and recreation,
- G. shoes and leather – shops with shoes and leather,
- H. interior design – shops with interior design items, decorations, household items and appliances and furniture,
- I. gastronomy – restaurants, bars, cafes, pubs and food vendors,

- J. services typical of shopping centres – services that usually can be found in shopping centres, such as flower shops, post offices, telecommunication shops, travel agents, insurance, finance, real estate etc.,
- K. services not typical of shopping centres – a major part of services that are not usually found in shopping centres (often or at the moment) such as: petrol stations, warehouses, second-hand, hotels, agencies, construction companies, renovation companies, transportation companies, offices specialising in services for business (lawyers’ offices, accountancy, design companies, interpreters, advertising etc.), cultural, associations, museums, theatres, entertainment, gambling, car sale, educational system and others,
- X. not classified, vacant – vacant spaces, refurbished spaces, unknown or unclassified operations.

The first part is often used by shopping centres managers to divide their shop listings into basic classes. Therefore it is easier to use this data for comparison and also analysis of city centres. Most of the retailers (A-H) generate pedestrian activity, the same with gastronomy (I). Services are divided into those that are usually found in shopping centres (J) and those that are not (K). The latter with vacant outlets (X) do not add much to the attractiveness and walkability of city centre. Other services (K) are important, but their existence in large numbers along pedestrian areas means that it is not in best shape.

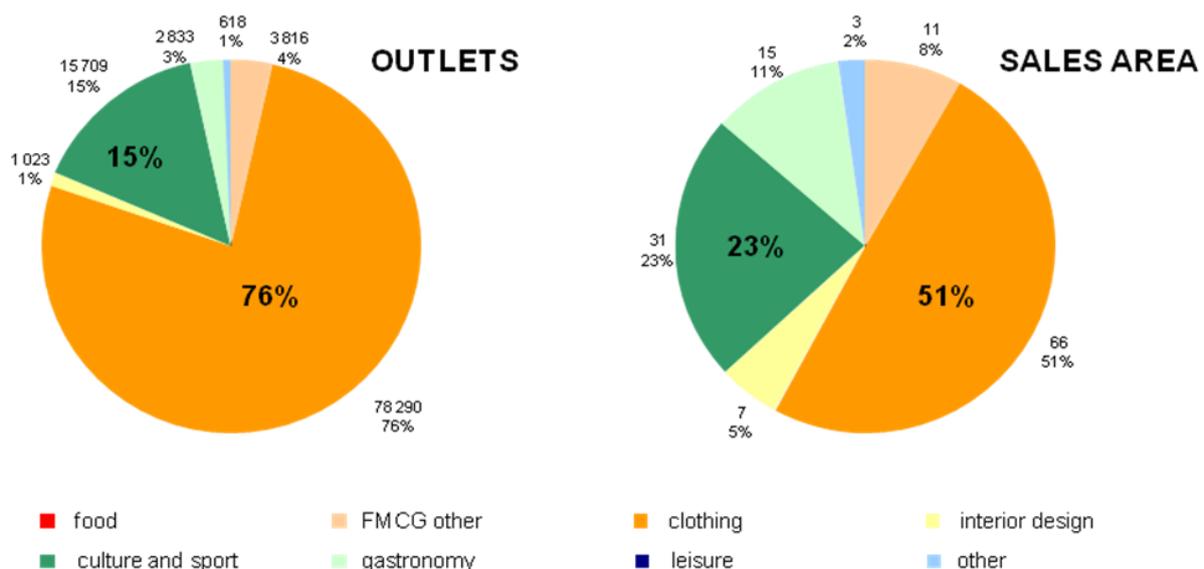


Figure 1: Number of outlets vs. sales area in Bullring Shopping Centre in Birmingham, source: Bullring data, own analysis

The main issue, concerning the methodology, is that collecting data based on the number of shopping outlets, not their sales area might be misleading and inaccurate for the retail impact or change analysis. In terms of retailing, the most important factor is sales area of an outlet. When surveying only the amount of services this figure is not taken into account. But in reality it is the most important factor/weight of such impact. To illustrate this problem above is a comparison of the number of outlets to the sales area in Bullring Shopping Centre in Birmingham, based on the centre’s official data. The most visible difference is in clothing shops attributes. More than the half (51%) of all sales area are clothing outlets, while their share total number is more than three quarters (76% and 78 290 sq m). As for the other types, the rule is opposite – the share in number exceeds the share area. For example 23% of all outlets is connected with culture and sport (31 shops), while the total share in area is only 15% (15 709 sq. m). There difference is more visible in case of FMCG non-food items

(8% of the number to 4% of the area), while the biggest disproportion is in interior design items (8% of the number to 1% of the area) as well as gastronomy (11% to 3%). This means that the latter have small sizes, but are quite large in number.

3. Android application

In order to simplify the surveying procedure a special smartphone application has been developed. It allows the surveyor to record identified outlets in the field using their mobile device. We were looking for a simple solution that would aid the available and free tools for data analysis.

The application has been conceived by the author and written by an application developer – Paweł Fierek. It works on all Android devices (smartphones and tablets) that have 2.3 or higher version of the operating system. Other requirements are – GPS functionality of the device, camera for taking photos and internet connectivity. Although making phone calls is not necessary, it is advised that the device is constantly connected to internet by mobile network (needs a SIM card with a data plan).

The surveying procedure is quite simple. First the surveyor has to set up the app for work. They input the user name (text string) and user ID (3-digit number). The user name will later allow for easier identification who was collecting the data. It does not have to be unique, though it is advised. User ID will later be used to assign individual ID of surveyed places, therefore it has to be unique among all surveyors working in one place. Another field in the settings screen is for defining an object (building, centre etc.). It may be a nick name or short name that will later be used to assign surveyed outlet to a certain object. Later, when analysing the data it is easy to extract points located for example in given shopping centre.

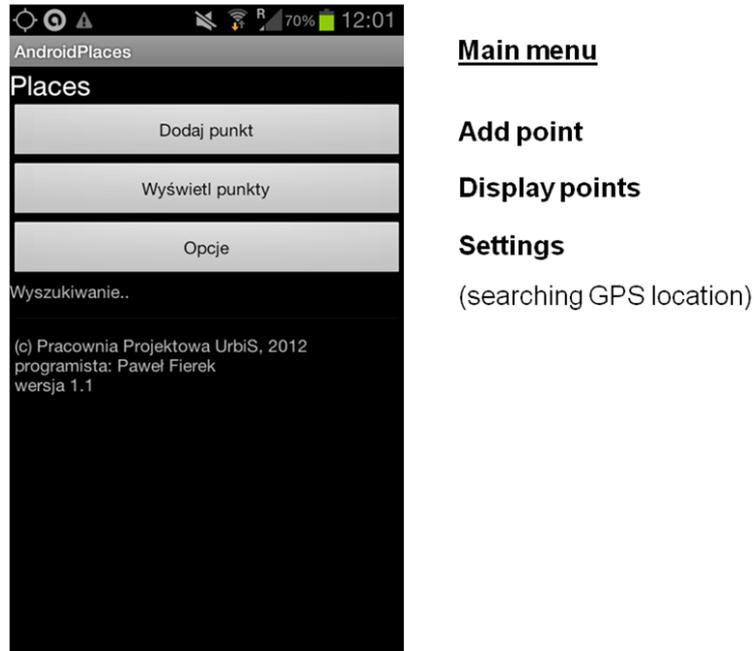


Figure 2: Main application screen

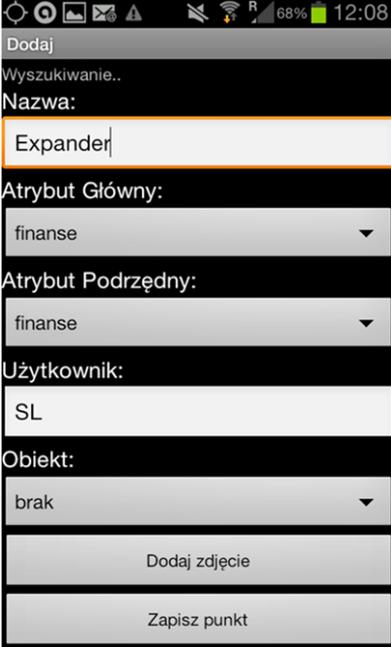
	Add point
Name	Name
Main attribute (id1)	Main attribute (id1)
Secondary attribute (id2)	Secondary attribute (id2)
User	User
Object	Object
Add photo image	Add photo image
Save point	Save point

Figure 3: Application – adding new point input screen

Work in the field means repeating input steps for all points. The surveyor inputs the name of the outlet (or a short version of the name). Then chooses the main attribute (id1) from a predefined list of 30 main classes. After choosing this another attribute has to be chosen (id2). It is a subcategory for the main one, that usually gives a further choice of outlet's specialisation from a list of usually 3-6 classes (up to 12). They are also taken from a predefined list. On this input screen user name is displayed, but cannot be edited. There is also a drop down list of objects to choose from (by default it is set to "none"). These are predefined by user in the settings section.

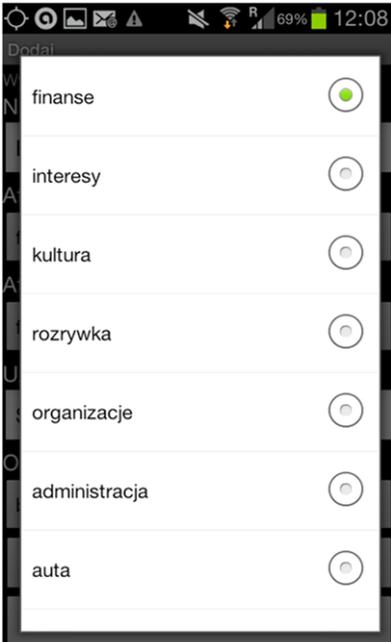
	Main attribute (id1)
finanse	finances
interesy	business
kultura	culture
rozrywka	entertainment
organizacje	organisations
administracja	administration
auta	automobiles

Figure 4: Application – choosing main attribute (id1)

Next, the surveyor takes a photo of the outlet's shop front, window or building. It is not obligatory, but highly recommended. Storing the image will make it possible to check the input data after the has been finished. Later on it may also be useful for comparing how the place has changed – when there is another survey performed. The image is stored separately on the device. It is advised to turn on the geotagging option in the device photo application, so the images are georeferenced automatically.

Last stage consists of locating the surveyed point on map. By default Google Street Map is displayed with a current GPS location of the surveyor. It can be switched to display the satellite image, if necessary. Though most mobile devices are quite accurate on the (especially these equipped with A-GPS), there might be some errors. When such need occurs the surveyor can manually relocate the placemark on the map. It is also advised to check in GIS software prior to field work, how the satellite image is overlaid on a specific working map. Usually the image is an aeroplane image taken from an angle, meaning that the bases and roofs of buildings are not in the same place. Usually the image is aligned by base. With that the surveyor is aware where to place the placemarks to be most accurate.

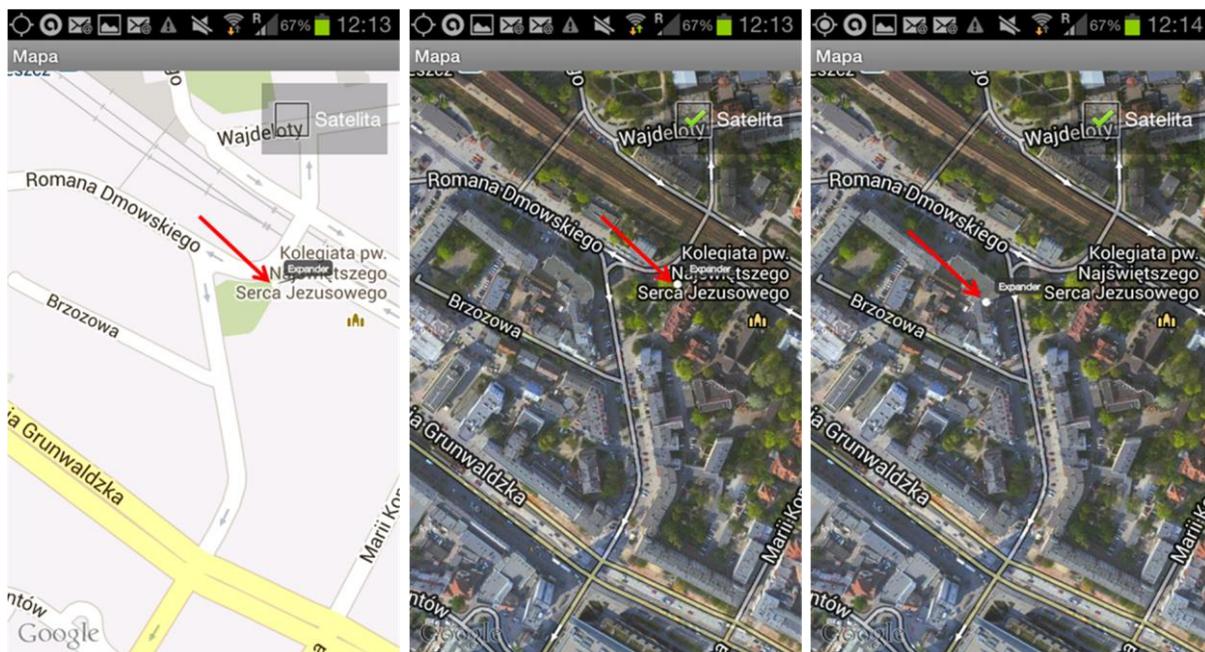


Figure 5: Application displaying and correcting point location
(left – google maps, middle – google satellite, right – manually corrected location)

Later the point is saved and the procedure is repeated for all the outlets in the analysed area.

The data stored by the application is as follows:

- Point ID – unique, consisting of 3-digit user ID with following 5-digits, being consecutive numbers for each point; this field is assigned automatically.
- Name – manually entered outlet name.
- Main attribute – stored as ID number, based on surveyor's choice from the list.
- Secondary attribute – as above, but referring to the secondary sub-class.
- Main attribute – automatic, descriptive text string of main attribute for easier reference.
- Secondary attribute – as above, but for the secondary sub-class.
- Object name – a text string from a chosen list, based on the choice of surveyor (or "none").
- User name – automatic field for the user name.
- Date and time – automatic time stamp of the survey.

- Latitude and longitude – these are based on the device GPS values or manually relocated point while inputting.

In order to analyse the data in GIS it has to be imported into the software. There are many commercial as well as free programmes for GIS. This application has been tested with QuantumGIS, which is an open source, free tool. In the app's settings menu there is an option to save all stored data to a file in the device memory. A unique comma separated values file format (CSV) is created. This can be easily imported into GIS. For latitude and longitude WGS 84 (EPSG:4326) is used as a coordinate system. Points may be also again manually relocated, if there is such need to adjust them to the map.

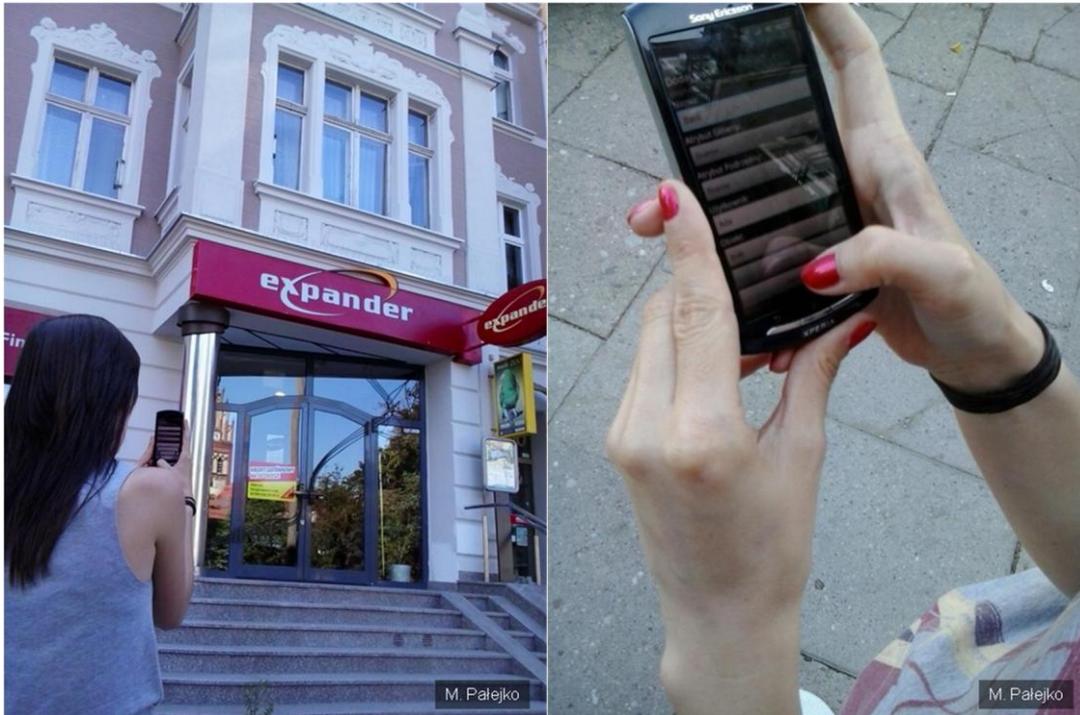


Figure 6: Application – field work, taking images and inputting

Photo images of the surveyed point are stored on the device while working and can be downloaded manually. Their filenames correspond with individual point ID's. When needed these images can be geotagged again using EXIF tools, especially when the original points have been readjusted in GIS software.

4. Main issues

The main issue of this method concerns the type of information surveyed. Each outlet is identified as a point, without any information about its sales area. It is not a limitation of the app, but rather the abilities to judge that in the field. Shop owners are not keen to provide that information. Assessment or approximation would not be a reliable source of information for further analysis. But given that impact is weighted by scale, not only occurrence of an outlet, this has to be taken into account when analysing the data.

Another is that there needs to be specific person who would be collecting data – a surveyor. This means that the data collection and analysis needs to be performed on purpose, and requires engagement of people. But operating the application is very simple, though some basic training is needed – especially regarding assigning to classes. The variety of types allows for better retail network analysis, but in some cases may be misleading to the surveyor.

In terms of the hardware there is a noticeable limit of battery life. Using GPS and having the screen illuminated most of the time results in quick battery depletion. Most of smartphones will allow for 4-5 hours of field work. This can be enhanced by changing battery during survey. Also using tablets with longer operating lifetime, although these are less practical for the survey due to their physical dimensions.

Last issue concerns the legal matters of collecting the data in the field. According to Polish law one is allowed to take photos standing in a street that is public. But entering private land and taking there photos needs approval from the owner. And such is the case of most shopping centres. These have set regulations that do not allow taking photos without a written permit. Owners and managers of individual shops and shopping centres often do not agree to any surveying of their outlets. In such cases the survey has to base on publicly available data – such as plans and shop listings.

5. Example of analysis

Below is a description of an exemplary listing of services points in two Polish cities – Elbląg (from 2012, around 125 000 inhabitants) and Gdynia (from 2008, around 250 000 inhabitants). These show how retailing is structured in downtowns and how it changes when looking at broader areas, such as downtown (meaning a larger part of the city, including the strict centre) and the total number of the analysed city part (that includes other districts).



Figure 7: Part of Elbląg downtown – surveyed service points

Service points were surveyed in Elbląg with the use of the Android application. Above is an image showing their locations on map, with different colours meaning different classes. Main shopping streets are becoming visible where the density of points is larger. The data was then used to mark these areas on the map and also analyse the composition of the stock and statistics.

Below is the table containing the aggregated data for both cities.

Table 1: Number of service points in Elbląg and Gdynia

Retail outlet		Number of points/outlets							
		Elbląg						Gdynia	
Type	Description	TOTAL		Downtown		Centre		Downtown	
A	Food	311	13%	142	11%	41	6%	261	10%
B	Fashion	326	14%	130	10%	70	10%	250	10%
C	Multimedia, press, books, presents	146	6%	93	7%	45	6%	185	7%
D	Health and beauty	85	4%	45	3%	15	2%	89	3%
E	Accessories, jewellery, watches	31	1%	18	1%	15	2%	65	3%
F	Sport and recreation (shops)	10	0%	8	1%	6	1%	14	1%
G	Shoes and leather	56	2%	14	1%	9	1%	63	2%
H	Interior design	105	4%	50	4%	17	2%	96	4%
I	Gastronomy	99	4%	73	6%	54	8%	148	6%
J	Services typical of shopping centres	215	9%	154	12%	109	15%	389	15%
K	Services not typical of shopping centres	767	32%	480	37%	273	39%	909	36%
X	Not classified, vacant	241	10%	87	7%	51	7%	85	3%
TOTAL		2 392	100%	1 294	100%	705	100%	2 554	100%

In Elbląg there are 2 392 service points, half of them in the downtown area (1 294) and one third in the centre (705). In Gdynia the number of outlets in the downtown is twice as much as in Elbląg, but the city is also larger (two times more inhabitants). In Elbląg the largest class of retail outlets are fashion shops – 326 (14%), then food (311 and 13%). But the dominant in number are services that are not typical of shopping centres – these total for 767 and one third (32%) of all. 241 outlets (10%) are not classified or vacant.

When narrowing down from the total analysed area to the centre of Elbląg there are some observations to be made. When the area becomes smaller and more central the share of

food shops is also falling – from 13% total, through 11% in downtown to 6% in centre. And the opposite rule is for gastronomy that is increasing from 4%, through 6% to 8%. Similarly services also grow in their share – both those typical of shopping centres (9% – 12% – 15%) and those not typical of shopping centres (32% – 37% – 39%).

When comparing only the downtown areas of Elbląg and Gdynia there are similarities between them in the share of different types. Typically a downtown area would consist in 10% of food and 10% of fashion shops. Then there would be 7% of multimedia, press and book shops and 6% of gastronomy places. Other retailers' share would be below 5%. In terms of services there were 12-15% of services typical of shopping centres. The largest group (36-37%) would be services not typical of shopping centres. This is mainly because these central areas serve also as business districts rather than purely main shopping and leisure streets.

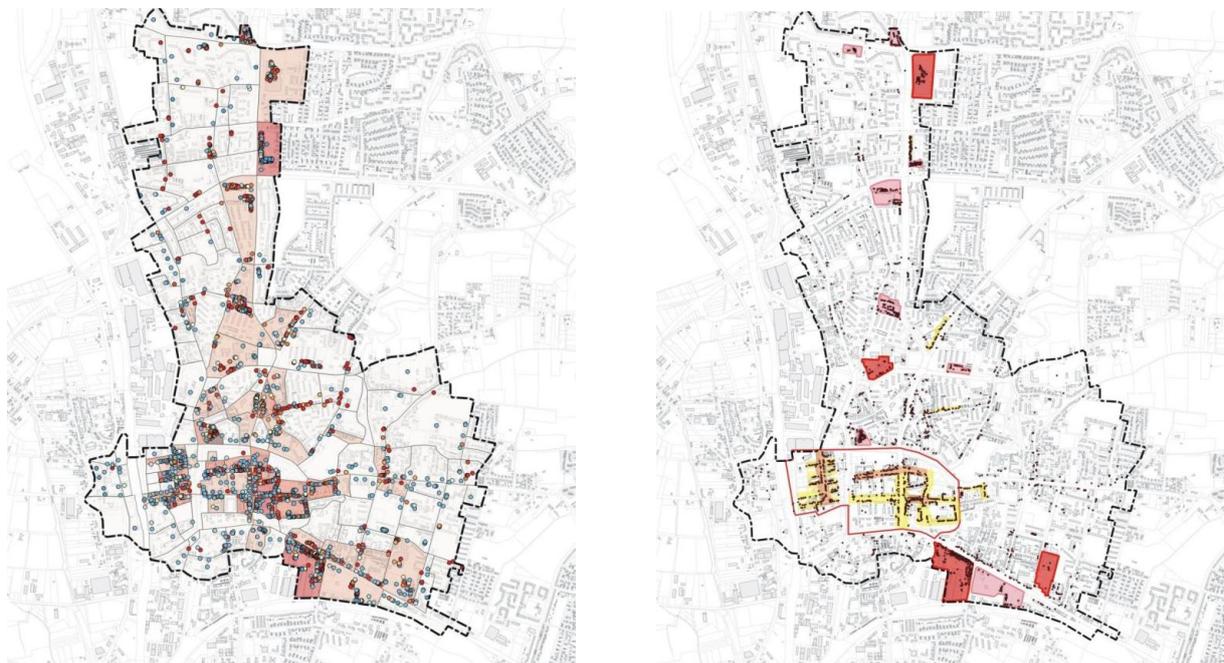


Figure 8: Elbląg – retail and service analysis

6. Comments

The application is easy to operate, also for unskilled surveyors. There is no special hardware necessary, as most of people own cell phones and many already have Android smartphones. Therefore it is a universal tool for data collection on services and retail location. Almost anyone can be engaged in surveying.

It is quick and accurate. It takes less than one minute for an experienced surveyor to enter one outlet into the database. Depending on the density of services and proximity to another surveyed place it takes on average 2-3 minutes per one outlet. The data is reliable and precise, as it is collected by a trained person and the application allows for validation of the location on map and also manual relocation, if needed. There are reference photos for reference if there should be a need to check the data in the future.

Although the current version is in Polish, the classes of services are universal for surveying worldwide. Using common classification for all surveys allows for comparability of the data between different cities and countries. It does not immediately relate to official census and record classes, that are specific in each country.

7. Planned future development

There are some improvements to the application already planned. First of all the collected data should be stored on a server or in the cloud, which would simplify the access to the database. It would also allow instant access to the full database without the need to import parts of surveyed. This would be helpful especially in case of surveying large areas, where more surveyors are working at one time.

Another development planned is to make possible comparison with previous, surveyed states. In such case the application would display suggestions for the surveyed place, based on the data from previous data collection. This would allow the user to simply confirm that the outlet is the same as previously or enter new data for a place that has changed. With this it will be possible also to easily identify places that have not changed their use – at the moment they are surveyed, not afterwards while analysing in GIS.

Apart from that the application will be translated into English to make it applicable internationally. Currently the application is only available in Android version. If there is such need it will be developed for iOS and other operating systems. Classes are stored in a separate file, which makes them editable and it is possible to change them. In such case the application can be used for other purposes. It is possible to survey other spatial occurrences, as long as the classification does not require more complex division than into two classes – main and subcategories.

It may be useful to be able to make possible importing customised maps or underlays from separate files – such as AutoCAD dwg/dxf formats or shp references to shapefiles. This would help working in areas where immediate reference to a preset data is necessary. Or it would make working offline possible, when the preloaded map would be footprints of buildings – therefore saving the data transfer needed to operate the application.

The Dynamic State of Historic District and the Effectiveness of Historic Conservation Plan---Case Study of Shanghai

Yang LIU, Tongji University, China

Synopsis

This research concerns about the effectiveness of the Historic District Conservation Plan in Shanghai. By focusing on the change that happen both before and after the implementation of the conservation plan, this paper reveals the advantages and disadvantages of this model of planning practice and the causes of the problems.

1. Introduction

Historic districts are integral parts of the city, the conservation of them needs to protect the historic elements, atmosphere, as well as promoting their development. The conservation needs to integrate historic districts into the housing, transportation and social system of the whole city. China launched the conservation of historic cities in 1982. In 1997, the "Shanghai historic city conservation plan" designated 12 historic districts in Shanghai central area. In order to deal with the disjoint between the conservation and the construction activities of historic districts, the Shanghai government started to formulate the Historic District Conservation Plan in 2003, and finished and implemented them in 2005 (Wu, 2007).

A lot of previous researches concerning conservation areas have been focused on the effectiveness of historic conservation (Shiple, 2011), the effect of conservation on local development (Gilderbloom, 2009), and the sustainability of conservation areas (Vehbi, 2009).

This paper focuses on the Old City Historic District, which is located in the central part of Shanghai and has extremely high density of population. By field survey, resident interviews, and research on second hand data and governmental files, we reveal the conditions of historic districts, identify the deficiencies, trace the causes and propose some suggestions.

2. Condition of the Old City Historic District before the Historic Conservation Plan

2.1 The Old City of Shanghai

The Old City (also named as Laochengxiang) is located in the central area of Shanghai and was the traditional core of Shanghai before Qing dynasty. Among the 12 Historic Districts of Shanghai central area, the Old City is the only one that famous for its traditional Chinese buildings and ancient Shanghai characteristics. As a typical unplanned city area, it has a clear boundary and unique city form, possess a large number of pleasant small-scale alleys and diverse architecture types. It is also an important part of the urban tourism system, with the famous Yuyuan Garden and City God Temple located in the center of the district. The outstanding universal values of the Old City lie in its unique city form, natural urban texture, diverse alleys and buildings, which need comprehensive conservation. (Figure 1&2)

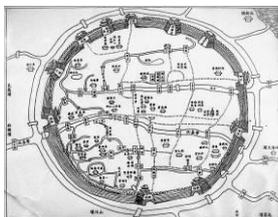


Figure 1: The Old City in history (Wikipedia) Figure 2: Location of the Old City (SUPDI 2005)

2.2 High population density and bad living condition

The Old City has an area of 199.72 hectares. In 2005, its population was 133.2 thousand and the population density was 66.7 thousand per square kilometers (SUPDI, 2005). Meanwhile, most of the residential buildings in the district were 2~3 storeys, so the per-capita housing area was very low. The overload of historic buildings was harmful to their conservation.

There were also lots of unauthorized buildings and shanty houses in the Old City, which were unsafe and had negative impacts on the environment of the historic district.

2.3 Inadequate conservation of heritage

Among the various historic buildings in the Old City, just 19 buildings were listed as Culture Relics or Shanghai Excellent Historical Buildings and protected by laws. Other buildings, which form the historical features of the whole area together with those listed buildings, were unprotected and confronted with the danger of demolition.

Under the enormous pressure of urban renewal and redevelopment, a lot of historic buildings were dismantled, the diverse alleys and pleasant-scale spaces were demolished, and the traditional urban textures were altered. By 2005, about one fifth of the texture of the Old City had been transformed.

Due to the lack of specific planning and construction controlling, the intensity of new developments was enormously higher than those of traditional blocks. These new high rises and large scale buildings had a negative impact on the low-rise characteristic of the Old City.

2.4 Trend of Redevelopment in Old City

The old city was facing increasingly strong redevelopment pressure. As the Chinese government had launched a strict restriction on the transformation of rural lands into urban lands, the expansion of cities was limited and the need to reuse the land in inner cities had increased. In the years before 2005, the new constructions gradually infiltrate into the old districts of the city. Since the Old City locates in the central area of Shanghai where land resources were extremely rare and precious, there was a trend that more and more land in the Old City was going to be redeveloped, as the land in the surrounding areas of the Old City available for redevelopment were decreasing.



Figure 3: The Old City periphery in 2000 Figure 4: The Old City periphery in 2005 (Google Earth)

2.5 The Outlook of the Old City in Government Plans and Policies

In the plans of Huangpu District (the administrative district where the Old City locates), the functional orientation of the Old City was a touristy and commercial area, with sound residential function. The Yuyuan Garden and its surrounding areas in the Old City were planned as an important part of the central commercial area of Shanghai, function as a commercial and tourist node, with strengthened cultural and entertainment services, accompanied by some business services. The development of those functions and the increase of tourists would bring the need for various facilities, which will trigger the enormous amount of development and construction in this area.

According to reports by the Huangpu District Government, they had been pushing forward the urban residential area renewal in the past few years. During 2000~2005, 2.3million km² of old houses were demolished, 50 thousand residents were relocated from their houses. Until 2005, there remains 1.6million km² of Lilong old houses (a type of Shanghai traditional low-rise house), 1.1million of them need to be reconstructed or renovated (Huangpu District Government, 2005).

In order to respond to those rapid urban redevelopments and preserve valuable historic buildings, as well as coordinate the new developments with existing urban texture, plans were needed to properly regulate those redevelopments and constructions.

3. Historic Conservation Plan Analysis

In order to make up the deficiency of historic conservation in the Old City Historic District, the historic conservation plan was launched in 2005. It functions as a regulatory plan which combines historic preservation with construction controlling, providing a comprehensive basis for the conservation and urban redevelopment of the Old City. Apart from the conservation of historic elements, the plan also requires the continuation of the region's historical features in the urban regeneration process, as well as improve the regional function and quality to meet the demand of comprehensive rehabilitation.

All the contents of the Historic Conservation Plan can be divided into three levels, namely historic district rehabilitation, historic conservation and construction controlling. Besides, the plan proposes some requirements and suggestions to improve residents' heritage awareness and encourage public participation. In this part, we analyze the Historic conservation plan from the perspective of balancing conservation and development.

3.1 Historic district rehabilitation

Comprehensive improvement of the district is the premise of good historic conservation, the conservation of the Old City must be based on the rehabilitation of the whole district. By regulating and adjusting to the changes in the Old City, the conservation plan proposes a way of rehabilitation that coordinates with the continuation of heritage and community.

(1) Functional orientation and development of the historic district

The built environment of the Old City is relatively stable, therefore the functional orientation needs to fully consider the existing conditions and the requirements of conservation. The scale and layout of buildings determine that the functional possibilities of reusing them are restricted in a relatively small scope. The functional orientation of the historic district is a complex historic city center which is "a residential area with traditional features", "a public service and commercial area" and "a cultural tourism area".

Since conservation is the prior thing in the historic district and some residential areas are not suitable to compatible with other functions, the conservation plan put forward functional guidance for each area. In "public function restriction area", facilities that incompatible with residential environments will be prohibited; in "public function promotion area", specific public functions will be encouraged.

In "public function promotion area", in order to coordinate with the development of the whole city and link up with Pudong CBD, the plan proposed to regenerate the areas alongside the Fuxingdong Road, which is the major road in the Old City and lead to Pudong CBD. The regeneration next to the road would focus on improvements of business functions, as well as strengthening the commercial and cultural functions, so as to improve the viability of the Old City and lead the revitalization of the whole district. The plan also proposed to optimize the commercial area of Yuyuan Garden and the cultural tourism area of Confucious' temple, to form an integrated tourism area with multiple themes and outstanding features.

(2) Social structure problems and Mode of historic district redevelopment

Different modes of redevelopment would bring different type of spaces and will affect the social structure of the Old City. The redevelopment mode of "large-scale demolition and renovation" would not only alter the historic feature of spaces, but also relocate large amount of residents and reduce the job opportunities for low-income residents. In the redevelopment of an historic district, more concerns need to be paid on the benefits of the original residents in the area.

In order to continue the residential diversity and improve the viability of the Old City, the historic conservation plan advocates gradual "small-scale renovation" to solve problems flexibly for different residents, so that pleasant scale new buildings are harmoniously inlaid in historic surroundings, and avoid damaging the functioning-mixing feature of the Old City. The plan also advocates the supply of small apartments in the redevelopment projects in the Old

City, which would provide available housing for the middle and low income residents, in order to avoid severe change of social structure.

The historic conservation plan advocates attracting various kinds of small investments to renovate the area, as long as they obey the rules of the conservation plan. It also encourages the participation or dominance of local residents during the renovation process, with the support of community-base organizations, so as to conduct a “bottom-up” improvement of the historic district.

(3) Improvement of public facilities and infrastructures

Since the land resources available for redevelopment is quite limited, the public facilities for the Old City could be shared and balanced with the surrounding areas. The facilities could adopt lower quotas of land area as long as the gross floor area of those facilities meets the demands of basic functions.

Infrastructures, such as sanitation, drainage and gas, were insufficient. The plan proposed to adopt multiple measures suitable for the Old City, to meet the demands of infrastructure and the requirements of historic conservation at the same time. In order to improve the streetscape, electric wires above ground would be reinstalled and buried underground together with other infrastructures.

(4) Transportation strategies of the historic district

In order to conserve the historic feature and scale of streets in the Old City, the conservation plan proposed to minimize road widening and make full use of the existing road network.

In solving the transportation problems of the Old City, the conservation plan suggests to set up a traffic demand management system with various strategies, apart from the effective supply of transport facilities, to balance the traffic demand and supply. By advocating the multifunctional use of land and avoiding excessive development of commercial and business buildings, along with restriction of through traffic, to reduce the traffic volume.

The plan also promotes a public transport oriented transportation system. By setting proper bus routes and bus stops, together with sound connections among subways, bus and bicycles, accompanied by proper transportation policies, to promote a unified and coordinated public transportation mode.

(5) Improvement of public space and green environment

There was a low green coverage and lack of public open space in the Old City. On the one hand, the conservation plan proposes to retain all the public green space, street trees and other trees that are more than 30 years old, retain the existing public space and alleys; on the other hand, to improve green coverage and increase public open spaces at the proper place, and set up “public walkways” to connect those public open spaces and facilities.

3.2 Historic conservation and construction controlling requirements and measures

3.2.1 Historic conservation requirements and measures

(1) The objects of conservation

The distinguishing features of the Old City are not only about its old buildings, but also its space and historic environment. The objects of conservation are classified into four categories: historic buildings, space (historic roads, alleys, parks, square, etc.), texture (historic urban texture formed by alleys, blocks and buildings), and other elements (historic places, intangible heritage, etc.)

(2) Building conservation and renovation

The Old City is in a constantly changing condition and different buildings have different needs for renovation. Basing on detailed field survey and assessment, the conservation plan classified all the buildings into five categories according to their values and set the preservation, renovation and demolition requirements of each building. They are: Strictly

conserved buildings, Retained historic buildings, Ordinary historic building, Class A Ordinary Historic Buildings, Class B Ordinary Historic Buildings, Buildings to be demolished, Other buildings.

(3) Historic street space conservation

The future of the Old City is also demonstrated by the historic streetscapes and experienced by humans on the street, but the traffic pressures are threatening the conservation of streetscapes. In order to handle this contradiction, the historic conservation plan designated 1 historic road and 34 historic alleys. The alley alignment and width are restricted by “alley control line”, while the height and setback of buildings are also regulated.

(4) Historic texture conservation

The historic texture of the Old City contains messages of urban development, but the modern developments are destroying and erasing them. Urban texture is affected by the layouts of streets, block divisions and buildings etc. In order to preserve the integration and continuity of urban texture, as well as control the scale of new buildings and preserve the diversity of spaces, the historic conservation plan takes the historical avatars as the basis for the set up of redevelopment unit. According to the layout types of traditional buildings in the Old City, the conservation plan sets up guidelines of building layouts for each block.

3.2.2 Historic district construction controlling

In order to coordinate redevelopments with existing historic features, the historic conservation plan sets up regulations and guidelines for the new constructions, basing on the requirements of both historic conservation and district development.

Those regulations include: Building height control, Building density control, Building interval control, Gross floor area control and Building setback control.

3.2.3 The strictness of the conservation plan

The various regulations and principles in the historic conservation plan have different levels of strictness. In the aspect of “historic conservation”, the “strictly conserved buildings” have the most strong restrictions and are conserved according to laws; the “retained historic buildings” and “historic roads and alleys” also have mandatory regulations in the plan but have no laws to support their conservation; the conservation of “ordinary historic buildings” and urban texture are guiding and non-mandatory requirements. In the aspect of “historic district development”, besides the regulations of function in each block, all the other regulations are guiding requirements. In the aspect of “construction controlling”, all the requirements are mandatory.

The strictness of those regulations is different, which is an important factor for the huge difference in the conservation effectiveness in different aspects of the Old City conservation.

3.3 Promoting public participation

The conservation and rehabilitation of the Old City will be confronted with large amounts of various interest groups, bring with them intense conflicts. Being a plan that takes the protection of public interests as its starting point, the conservation plan needs to take the various interests into full consideration. Besides, the plan also advocates taking measures to improve the residents' heritage awareness.

During the process of planning, including the data collection in the early stage and the medium-term outcomes reporting period, comments and suggestions from relevant government departments, developers, and resident delegates are collected with seminars or in written form. Those comments are considered as references for the optimization of the conservation plan. In the process of planning implementation and feedback collection, media announcement or consulting seminars are held for the participation of residents. The plan also suggests optimizing the announcement, consultation, feedback and complaint system during the conservation and rehabilitation process.

4. The dynamic state of the historic district after the conversation plan

4.1 The developmental state of the whole Old City

4.1.1 Measures taken for the improvement of facilities, public space and social services

In order to improve the environment quality, living standard and facilities for the residents in the Old City, the local government has carried out lots of “down-to-earth projects”. These projects include the management and renovation of the old residential quarters, optimization of infrastructures such as water facilities, renovation of street and alley space for the benefit of pedestrians and improvement of the streetscape.

In respect to transportation facilities, the Henan road and Zhoujin road, which are major roads in the Old City, have been widened. Two metro lines were opened in 2007 and 2010, both of them have a subway station in the Old City. As for public green space, Xiaotaoyuan park in the central part of the Old City has been built, green belt on the southern edge of the Old City is under construction.

Meanwhile, measures have been taken to improve the community facilities, such as setting up community health stations, community education and cultural facilities. Community services such as assistance for the elderly and low income families, training and medical service for floating migrants have been provided.

4.1.2 Economic development in the Old City

(1) Commercial developments

Since the implementation of the conservation plan in 2005, the commercial developments in the Old City are mainly around the Yuyuan area, while the other parts of the Old City have been focused on improving residential and community facilities. Yuyuan area is one of the three key areas of development in the Huangpu district from 2006 to 2010. (Huangpu district government, 2011) During this period, the core part of Yuyuan area has strengthened its character as a traditional commercial area with specialty commodities and restaurants, hotels and shopping malls have been built in the intermediate parts, while the outer parts have been focused on the renovation and optimization of transportation and the environment.

During 2006~2010, the Yuyuan area has attracted the investigation of 313 enterprises and provided tax about 20 million dollars to the Huangpu district government. It has also created 8349 new job opportunities. (Yuyuan sub-district, 2011)

(2) Changes in housing prices

By searching the property transaction data from the economic database and housing transaction prices on housing sales websites, we sort out the average commercial housing prices of the Old City, the Old City surrounding areas (less than 500 meters from the edge of the Old City) and the Huangpu districts (the administrative district where the Old City locates in) of the past few years. Because of data availability, we take the housing prices from 1999 to 2009 as subjects of research. The changes of housing prices in those three areas are shown in the chart below (Figure 5):

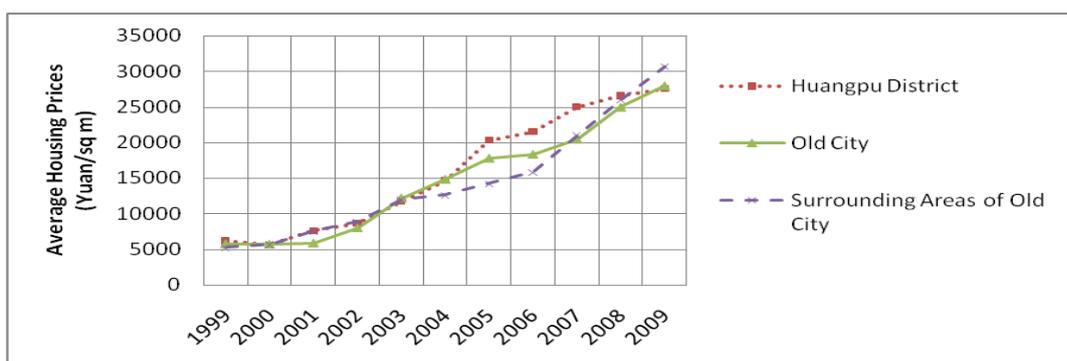


Figure 5: Housing prices 1999~2009 (<http://house.baidu.com/sh/>; <http://www.gtarsc.com/p/sq/>)

As can be seen from the chart, the housing prices of those three areas have been increasing during the years. Since 2006, the average housing prices in the Old City and its surrounding areas rose faster than that of the whole Huangpu district. During 2008~2009, the average prices of the Old City and its surrounding areas gradually surpassed that of the whole Huangpu district. Those facts show, to some extents, that with the improvements of environment and facilities, the economic and living conditions in the Old City and its surrounding areas have been improved, which attracts more residential investments and lead to the faster upgrade of commercial housing prices.

Meanwhile, the average commercial housing prices in the surrounding areas of the Old City rose faster than the prices in the Old City. As can be seen from the housing prices map for the year 2009, 2011 and 2013, the Old City was gradually becoming a “low land” of housing prices. There exists a circle of high-price housing surrounding the Old City. (Figure 6)

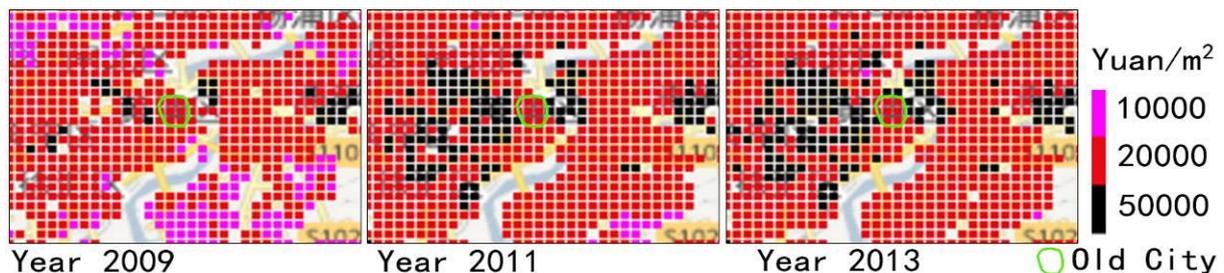


Figure 6: Housing prices map (2009- 2013) (<http://data.cityhouse.cn/historymap/shanghai/1.html>)

According to the property development data, since 2007, there have been much more high-grade real estate developments in the surrounding areas than in the Old City, which show that the restriction of redevelopments has slowed down housing prices rise in the Old City.

4.1.3 Community development and residents' living standard

(1) Change of population composition

As a district that locates in the central part of Shanghai, the Huangpu District has been experiencing a decrease in its total resident population. The resident population of Huangpu district was 678.7 thousand in 2010, decreasing at a pace of 20.3 thousand per year on average since 2005. While during 2000~2005, the resident population decreasing pace was 24.7 thousand per year on average.

Meanwhile, more migrants have moved into and reside in the Old City. Take the Yuyuan sub-district in the Old City as an example, in 2005, its registered population was 98.5 thousand, and transient population was 10 thousand. While in 2010, its registered population was 99 thousand, and transient population has reached 30 thousand. (Yuyuan sub-district committee , 2006, 2011)

As the original residents of the Old City were moving out and the transient migrants moving in, the population composition of the Old City has changed significantly and social structure becomes more and more unstable.

(2) Community population density and living environment condition

In the Conservation Plan, population relief in old residential quarters is proposed, and improvement of per capita living space is needed.

According to the census data of the Huangpu district in 2010, the Laoximeng sub-district in the Old City has the highest population density, which is 60.1 thousand/sq km, followed by the Yuyuan sub-district, with a population density of 51 thousand/sq km.

From the population data of each neighborhood committee, it is shown that in the residential areas without redevelopments, the population density is above 125,000 per square kilometer, among them the Fuchun community has the highest population density of 209 thousand/sq km, while that of newly built high-rise building areas are generally 40 to 50 thousand/sq km.

In the Conservation Plan, gradually relieve population by small-scale renewal is expected. But population relief way in the Old City is complete removal and relocation. That small-scale renovation that has been implemented in each old residential community is just a temporary measure for transition. It just improves basic element like the interior pipeline of the building, the roof, facades, outdoor road surface and can improve the residents' basic living environment, but cannot relieve the population problem. By surveying houses renovated, residential density in old house remains high.

(3) Way of residential removal

From whereabouts of removing residents in the Old City historic district, we can see that all original residents were removed and nobody came back. House compensation sites available for the removed residents are mainly located in Sanlin District in Pudong and Zhoukang District in Nanhui. Both of the districts are suburbs. House resource located nearby is just Dongyuan Lane in the south of the Old City. Just 650 suits of house there cannot meet the need of the residents to relocate in nearby.

On the redevelopment blocks in Luxiangyuan, the Old City, new buildings like villas are generally developed to a high grade for high profits, because of the restriction on floor-area ratio and building height. In the development of high-rise residential buildings in Luxiangyuan, the size is generally large. The acreage of every house is generally above 200 square meters. Small-sized house is scarce. So it is impossible for the original residents to remove back. High grade of the residential brings strong gentrification.

Therefore, that small-sized apartments should keep a certain proportion in the newly built residential buildings, which is proposed in the Conservation Plan, is just a suggestion and guiding requirement and non-mandatory. It cannot limit the development of completely high-grade new house building and large-sized house.

4.2 Conditions of heritage conservation and construction controlling

4.2.1 Heritage conservation condition

We sort out all kinds of development projects in Laochenxiang after the approval of the historic conversation plan, according to the statistical yearbook of Huangpu District over the years and project management information from Planning Bureau. 13 development projects have been approved before the historic conversation plan, and 6 projects are approved after the plan. The category of the project includes the development of housing, commercial office building, public facilities and so on (Huangpu District Government, 2006~2011). (*Figure 10*)
(*Table 1*)

Besides, the government renovates all old residential areas which are temporarily unable to be redeveloped or regenerated in the historic district. The main goal is to improve the residents' basic living environment, including the roof, the repair and rain preventing construction of metope, water pipeline renewal above and under the ground, wire renewal, road surface renovation, green replanting and so on.

(1) Condition of historic building conservation

Historic buildings under different protection level are in different conservation status. Among the 6 development projects approved after the plan, buildings that are designated as "strictly conserved buildings" or "retained historic buildings" are mainly located in Luxiangyuan. In this area, "strictly conserved buildings" are all reserved. Only one third of "retained historic buildings" are conserved, which violates the rules in the Conservation Plan that "retained historic buildings" cannot be demolished. Ordinary historic buildings in the areas which the development projects involve, including class A and class B ordinary historic buildings, are almost demolished completely (except for Greenfield project in Xiaotaoyuan) (*Figure 7~9*). In the Conservation Plan, Class A ordinary historic buildings are ruled to be restored to their original state after demolishment. But it is obvious that class A ordinary historic buildings demolished are not restored according to their original scale and style, seeing from the design drawing of Luxiangyuan.

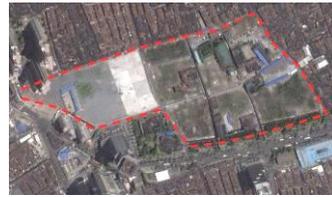


Figure 7: Luxiangyuan plot before demolition; Figure 8: After demolition ;(Google Earth)

Figure 9: Building conservation requirements (SUPDI, 2005)

(2) Conditions of historic street and space

Some projects involve protection of historic roads and streets. The shape of all historic streets is kept. Apart from early commercial office buildings which didn't meet the demand of width, borderline and height, projects completed after 2007 obeys the demands of historic streets by installing architecture podium.

During the year from 2008 to 2010, Huangpu District comprehensively renovated all the streets. The renovation includes clearing off obstacles on the sidewalk, sidewalk pavement, clearing off and demolishment or position adjustment for those non-compliant facilities, repair of the road surface and so on. In the course, the shape and the width of historic streets are kept, and the historic streets environment is improved.

(3) Conditions of urban texture

Most of the projects that approved before the formulation of the Conservation Plan didn't continue the feature of texture nearby, except several buildings with relatively low height and small volume. In the blocks of the Luxiangyuan project, which was approved after the Plan, the original texture type is mainly low-rise Lilong row texture. And some are traditional courtyard texture. The design drawing of Luxiangyuan shows that the row texture of newly built low-rise building coordinates with periphery, but the configuration format of the texture is not so abundant, compared from original texture. In the newly built high-rise residential areas, though the architecture texture format is row texture, the scale is huge and almost totally different from original texture. (Table 1)

Approve date	Year of Finish	Project	Building conservation			Historic street			Texture
			Strict	Retain	Ordinary	Shape	Wide	Height	
Before Conservation Plan	2005	Elison office building	--	--	--	P	N	N	N
		Senlian Commercial	--	--	--	P	N	N	N
		Daan Commercial	--	--	--	/	/	/	P
	2006	Yuyuan Hotel	--	--	--	/	/	/	N
		Yifen office building	--	--	--	P	N	N	N
		Jiacheng office building	--	--	--	P	N	N	N
	2007	Fudi Residential	--	--	--	/	/	/	N
		Sihua Residential	--	--	--	P	P	P	N
		Yulong commercial	--	--	--	P	P	P	M
	2008	Jinyu commercial	--	--	--	/	/	/	N
		Fudu commercial	--	--	--	P	P	P	N
	2009	HK complex	--	--	--	/	/	/	N
		Yinhuang complex	--	--	--	P	P	--	N
After Conservation plan	Unfinished	Luxiangyuan High-rise	P	M	N	P	P	P	N
	Unfinished	Luxiangyuan Low-rise	P	M	N	P	P	P	M
	Unfinished	Green belt	/	/	N	/	/	/	/
	2007	Xiaotaoyuan Park	/	/	P	/	/	/	/
	2007	Henan road expansion	/	/	N	/	/	/	/
	2008	Zhoujin road expansion	/	/	N	/	/	/	/

P: Positive Comment; M: Moderate comment; N: Negative Comment; /: The project has nothing to do with this; --: Data Unavailable

Table 1: Heritage conservation condition of projects (Data Source: Year book 2006~2011, field survey)

4.2.2 Construction controlling

In the historic conservation area, the change of land function basically lives up to the original demand of the conservation plan. For height controlling in the area, in the early years after the implementation of the Conservation Plan (in 2006), some projects have made a breakthrough; for height controlling along the streets, apart from projects completed early in 2005 and 2006, all projects following meet the demand of height controlling of architecture along the streets by podium installing. For the architecture density, the density of newly built

buildings is smaller than that of the original lane house; for the building interval, the volume of newly built buildings is larger than the original lane house, so the interval is relatively larger and meets the demand of the plan. For the gross floor area of buildings, some projects completed during 2006 to 2008 are beyond the planning limits, while projects in other years all meet the planning demand. (Table 2)

Approve date	Year of Finish	Project	Function	Height in block	Height along street	Density	Building intervals	Gross floor area
Before Conservation Plan	2005	Elison office	P	P	N	P	/	P
		Senlian Commercial	M	P	N	P	P	P
		Daan Commercial	P	P	N	P	/	--
	2006	Yuyuan Hotel	P	N	N	P	/	N
		Yifen Office building	P	N	N	P	/	P
		Jiacheng office building	P	N	N	P	/	P
	2007	Fudi Residential	P	N	P	P	P	P
		Shihua Residential	P	P	P	P	P	N
		Yulong commercial	P	P	P	P	P	N
	2008	Jinyu commercial	P	P	P	P	/	N
		Fudu commercial	P	P	P	P	/	N
	2009	HK Complex	P	P	P	P	/	P
		Unfinished	Yinhuang Complex	M	P	--	P	P
	After Conservation plan	Unfinished	Luxiangyuan High-rise	P	P	P	P	P
Unfinished		Luxiangyuan Low-rise	P	P	P	P	P	P

P:Positive Comment; M: Moderate comment; N: Negative Comment; /: The project has nothing to do with this; -- : Data Unavailable

Table 2: Construction control of projects (Data Source: Year book2006~2011, field survey)

In conclusion, for projects approved before the Conservation Plan, some didn't meet the planning construction controlling regulation, while all projects approved after the conservation Plan satisfied the demand.

4.3 Activities to increase residents' heritage awareness and public participation

The conservation and rehabilitation of the Old City need the support of local communities. Apart from the legal conservation and regulations, measures have been taken to increase the local communities' heritage awareness and attract them to participate in the conservation and rehabilitation process.

Since 2003, the Shanghai government has published albums and maps about the designated historic districts and historic buildings. Conservation seminars were also held to introduce those heritages to local residents. Every year, series of activities are held during the days before and after the "National Cultural Heritage Day". Activities such as "Approach Old Buildings" were organized to encourage residents' visit to historic buildings. Photography activities were also organized to promote the participation of photographers in presenting the characteristics of historic buildings.

In order to promote the local residents' awareness and understanding of the historic conservation plan, planning exhibitions were held in the local community. Brochures about the regulations and laws of historic conservation were distributed to residents, community neighborhood committee and property management departments.

In addition to these activities, however, there was inadequate participation of residents in the conservation of the Old City and a lack of dissenting voices when the historic buildings were dismantled. No community organizations for heritage conservation were set up, and there is a lack of bottom-up conservation.

4.4 Summary

Overall, the public space, transportation, infrastructures and community facilities in the Old City have been improved. Commercial developments mainly concentrated in the Yuyuan area, more job opportunities were created. Average housing prices in the Old City and its

surrounding areas have risen faster than that of the whole Huangpu district; less real estate developments happened in the Old City than in its surrounding areas.

With the moving out of original residents and the moving in of transient migrants, the social structure in the Old City is changing constantly, which aggravated the unstableness of the community. There lacks the cooperation among residents for the revitalization of the Old City.

The current transformation and development style in the Old City historic district is large-scale removal. The goal that trying best to conserve historic buildings, continue urban texture, retain original residents, maintain social structure stability and community diversity, give full play to the residential role and so on by gradual small-sized renewal and development advocated in the conservation Plan didn't realize basically.

In the large-sized removal, those protected by law were kept, but most historic buildings which just appointed by Conservation Plan were demolished without regulation of law. The new buildings accord with regulation of height, density and other regulations formulated in the Conservation Plan, but the original city texture and historic look undergo tremendous changes. Newly built high-grade houses after redevelopment also bring residential segregation. Comprehensive improvement measures adopted for old buildings just improve the most basic living environment. Residential density doesn't drop, residents' need of house improvement is not met, and residential environment improvement is badly needed.

Although there were measures for increasing heritage awareness of residents, there still lacks the support and participation of residence in the conservation and revitalization of the Old City.

5. Factors for existing problems

Large-scale removal results in demolition of large amount of historic buildings, change of texture and appearance, drastic alteration of social structure and so on. But such redevelopment and renovation mode of removal is inevitable because of the comprehensive effect of the current conservation plan, related policies, resident composition and their needs, the demands and interests of government and developers. In view of the current trend, large amount of other old areas in the Old City will also be redeveloped through this way when it is possible in the future. Following is the analysis of reasons behind the inevitability.

5.1 The mode of redevelopment dominated by developers for maximizing profit

At the present stage, various redevelopments undergone in the historic district are led by government and developers. In the whole process, residents just passively accept redevelopment and removal and don't take active part in it. By analyzing the existed redevelopment mode of the removal, we can find that in the whole operating process, the government and developers remove residents completely, and then demolish most buildings, except for those "strictly conserved buildings", in the redevelopment area. After the removal and site formation, the land will be sold to developers for development.

Because of the large cost of residents' removal (according to redevelopment statistical data in old area of Huangpu District, per family removal needs 1.5 suites of house as compensation), developers usually spare no effort to get reward from new development by increasing the amount of development and high-grade development.

The removal mode adopted is basically complete demolition. So the area developed again is to a great extent on the developers' own. In the historic district, historic buildings which need conservation and reservation are not centralized in certain areas; instead, they scatter in the whole featuring area. Therefore, if the small-scale transformation mode is adopted to reserve more historic buildings, the developable land will be fragmentary. It will be greatly affected by existing buildings reserved around. By this mode, high-grade development is impossible. Only common house development is suitable. Environment around and buildings reserved should be governed well, or this kind of houses will be unable to stand in the market. Therefore, this kind of development not only has to pay for residents'

removal in the redevelopment area, but for renovation of buildings reserved in non-development area and exterior environment and for partial residents mediation in the non-development area. Besides, Earnings from newly built house by this mode cannot compete with that from high-grade houses after massive demolition. Thus, developers tend to invest in vacant land after large-scale demolition.

If suggestion in the historic conservation plan that just renovates the majority of buildings and mediates some residents in these buildings is adopted, the government (or the developers) not only has to compensate residents who are mediated, but also provide funding support for renovation of buildings. The fund the government has to input is still tremendous even if the residents who stay were willing to offer some certain fund support.

Another way that might be adopted is to develop the historic old area towards high grade. The government (or developers) sells historic buildings after elaborate refurbishment and the original residents remove away. This way maybe suitable for some old houses with large acreage and good structure, but for many old houses in the historic district, their space is narrow and quality is low. Buildings transformed under this way would not get greater appeal from rich house buyers.

Therefore, the transformation led by the government and developers adopts mode of large-scale demolition and removal in the Old City, so as to gain maximum profits with minimum cost.

5.2 The function of the Conservation Plan on restricting demolition is insufficient

In the conservation plan, there is strict protection stipulation in “Law on the Protection of Cultural Relics” and “Regulations of Shanghai Municipality on the Protection of Excellent Modern Historical Buildings” about listed buildings (strictly conserved buildings). However, for the preservation of “retained historic buildings” and “ordinary historic buildings”, protection requirements are only determined in conservation plan and there is no clear legal protection. Thus, the large scale demolition of this kind of building is made possible in renovation and reconstruction.

As there is relatively strict restriction in the historic conservation plan about building behavior in the historic district, the reconstruction and re-development in the Huangpu district mainly concentrates on the surrounding plots of the Old City historic district in the last few years. However, along with the gradual completion of reconstruction in the surrounding areas of the Old City, the blocks within this historic district will face relatively large scale reconstruction. It can be seen from the schematic diagram of demolition plot of Huangpu district in the “12th Five-Year” Plan (figure 11), in the next few years, there will be larger scale demolition in the Old City and nearly half of this kind of demolition will be within “central conservation area” with relatively strict protection requirement in the historic area. (Huangpu Government, 2011)

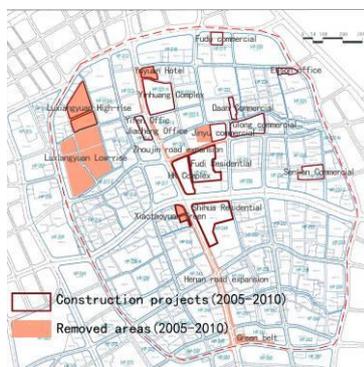


Figure 10: Constructions and removes during 2005~2010; (Data source: Year book,2006~2011)

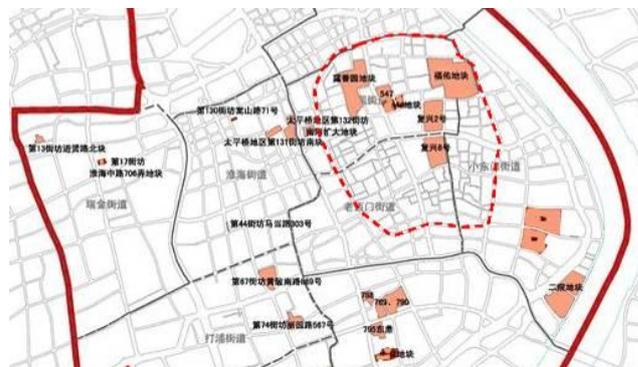


Figure 11: Removes during 2011~2015;(Data source: The 12th Five Year Plan for Land Use, 2011)

In the Luxiangyuan plot, the one that is under demolition in Old City, most part of it is within the central conservation area of the historic district, and includes many retained historic

buildings and ordinary historic buildings determined to be preserved in the historical conservation plan. Although this plot belongs to the area with relatively strict protection requirement in the whole historic district, the large scale demolition of it is not able to be restricted. Therefore, the current conservation plan measure cannot well protect the large amount of historical buildings in the Old City except the “strictly conserved buildings”. Under the circumstance of such huge development pressure, it can be predicted other “central conservation areas” within the historic district and the area with less strict conservation requirement than the Luxiangyuan plot might face with this kind of large scale demolition.

5.3 Lack of community support and participation, why?

In historic conservation plan, it puts forward that residents shall be encouraged to participate in the conservation and renovation as much as possible. It hopes to achieve the gradual renovation effect and then gradually improve the living environment of the whole historic district through the spontaneous housing improvement and renovation of residents.

(1) Uncertainty about the future of the Old City

However, when residents are asked whether they are willing to participate in the reconstruction of old houses, different residents have a different attitude. Through the interview with residents living in old houses, it is found although most residents know the area where they live is an area designated as a historic district, they have no idea about whether the houses they live will be demolished or not in the future. For residents with private property right, some residents express that they are unwilling to spend lots of money on house repair and renovation as they don't know if the houses they live will be demolished or not in the future. If the house they renovated is demolished in the future, the money they spent on reconstruction will be wasted. Meanwhile, some residents also express that if it is determined that their houses will not be demolished in the future, they would like to make repairs together with the government.

(2) Inadequate ability and unwillingness

In addition, a majority of the original residents who lives in the Old City say they cannot afford to make relatively large scale renovations due to economic condition. They hope the government could make removal and relocation as soon as possible, which then could improve their living conditions to a great extent. A large amount of the residents in the old city are tenants and those houses with non-private property right is also the houses with highest residential density and the worst using condition. During the survey, almost all those residents express they are unwilling to make reparation to the houses they live.

(3) Lack of community cohesion

Sense of community identity is the prerequisite for community cohesion. In the Old City, there is a high level of mobility and unstableness in population composition. The unstable mixture of commercial housing dwellers, migrant workers and low-income original residents brings a sense of alienation among them. Migrant workers lack a sense of ownership and responsibility; some residents (relatively wealthy residents or some original residents) have a sense of superiority and disdain to cooperate with other new dwellers. They are unconcerned about the common interest of the whole community; community participation lacks the psychological base of community identity.

(4) Lack of heritage awareness and real power, passive participation

The activities that were addressed to increase heritage awareness were mostly introductory and limited to a relatively small group of people. During the conservation and rehabilitation process, just a few residents have the opportunity to participate and most of the residents were just informed about the plan or redevelopment projects after the decisions had been made. A lot of the residents consider that their opinions and suggestions were not going to be accepted by the developers and the participation process was just going through the motions, so they chose to passively participate in the conservation and rehabilitation.

Therefore, although residents in the old city have a strong demand for renovation and reconstruction, they lack the ability to make renovations of houses due to their own economic condition. Meanwhile, as they have uncertainty about whether the houses they live will be demolished or not in future, they are unwilling to spend too much on the renovation of their own houses. The instability of the community population composition brings low community cohesion and a lack of cooperation among the residents. The activities for increasing heritage awareness and promote public participation was inadequate, local residents didn't actively take part in those activities. All these factors then result in the failure of bottom-up renovation by residents advocated in the historic conservation plan.

5.4 Summary

(1) In summary, as the redevelopments within the historic district is often led by government and developer, they tend to adopt large scale removal and relocation method for development in order to make up for the cost spent on large scale residents relocation and land acquisition for the renewal in old city.

(2) In historic conservation plan, there is no relevant strict supporting regulation for the preservation of "retained historic buildings" and "ordinary historic buildings" that is determined in the historic conservation plan, thus there is not enough strong and effective protection regulation for this kind of building at the time of demolition and then a large amount of buildings forming traditional historic feature will be completely demolished. Although relatively strict control for new building density and height is made, the texture protection and maintenance of social structural diversity put forward in conservation plan is hard to be realized as only recommendatory instead of mandatory stipulation is made to the building type, house type and development mode of newly built buildings. Within the possible limitation stipulated in the conservation plan, both government and developers will select the development method with minimum cost and maximum profits.

(3) Due to the limitation of the economic ability of the residents themselves and the uncertainty about the demolition of their own houses, the residents will seldom make bottom-up small scale renovation. Because of inadequate heritage awareness, high mobility and lack of community cohesion, there lacks the concern about heritage conservation and neighborhood cooperation among the local residents.

6. Conclusion and suggestions

(1) On the whole, the conservation plan has had positive effects on the conservation of heritage and the regulation of redevelopments in the Old City historic district. The environment and facilities of the Old City have been improved; economic condition was becoming better.

(2) However, community problems such as inadequate community cohesion, high mobility and instability still exist. The living conditions of residents in the historic district are badly in need of improvement. The mode of large-scale removal brings the demolition of large amount of historic buildings, eradication of historic urban texture, and severe change of residents' lives.

(3) Factors such as the domination of commercial developers in the rehabilitation process, the inadequate strictness of regulations on new developments, the lack of public support and participation resulted in the problems of conservation and rehabilitation in the Old City.

Measures should be taken to deal with those problems:

(1) The conservation and sustainable development of the historic district need more supporting policies, the government need to input more and pay more concerns on historic conservation. The mode of large-scale removal should be restricted, gradual renovation of small scale should be encouraged and supported both financially and by policy.

(2) The conservation plan should set more strict and explicit regulations on the conservation of historic buildings and urban textures, and proposes more detailed rules on redevelopment of each block. Laws and ordinances about conservation should be compatible with the plan and should pay more attention on historic buildings that have no clear legal protection before.

(3) The conservation of historic districts also calls for more participation of local residents. Activities for increasing heritage awareness should cover more residents and be held more frequently; those activities should also be more diversified. Measures should be taken to strengthen the cohesion and stability of the communities. The conservation plan and other government policies about the historic district (such as the removal plans) should be made clear to the residents. Various kinds of bottom-up renovation should be supported and encouraged by the government.

Acknowledgements

The author is grateful to Prof. ZHANG Song from Tongji University for his enormous help in this research.

The author is grateful to the anonymous reviewers for their valuable comments.

References:

- Gilderbloom, John (2009) "Historic preservation's impact on job creation, property values, and environmental sustainability", *Journal of Urbanism*, Vol.2 No.2 (7)
- Huangpu District Government (2005) *The 11th Five Year Plan for Property Market Development of Huangpu District*.
- Huangpu District Government (2002~2011) *Huangpu Yearbook (2002~2011)*, Shanghai: Shanghai Culture Press.
- Huangpu Planning Bureau (2005~2011) *Recordings of Developments in Huangpu District*.
- Huangpu District Government (2011) *The 12th Five Year Plan for Land Use of Huangpu District*.
- SUPDI (Shanghai urban planning and design institute) (2005) *Conservation plan for the Old City historic district*.
- Shiple, Robert (2011) "Heritage Conservation Districts Work : Evidence from the Province of Ontario, Canada", *Urban Affairs review*, Vol. 47 No.5.
- Vehbi, Beser (2009) "A Model for Measuring the Sustainability Level of Historic Urban Quarters", *European Planning Studies*, Vol.17 No.5 (5)
- Wu, Jiang (2007) *Conservation Plan and Governance of Historic District*, Shanghai: Tongji University Press.
- Yuyuan sub-district committee (2006, 2011) *The Five Year Plan for Community Development of Yuyuan Sub-district*.

Strategic Spatial Planning's Role in Guiding Infrastructure Delivery in a Metropolitan Municipality Context: The Case of Johannesburg

Peter Magni

Synopsis: Strategic spatial plans have been used with limited success to guide infrastructure provision. The paper reviews the example of the City of Johannesburg where processes and mechanisms have been implemented to this effect, highlighting tensions between future visions and the reality of existing infrastructure networks and municipal financing systems.

1. Introduction

Within the practice of town planning, strategic spatial plans are recognised internationally as a tool to guide and locate development outcomes within a given jurisdiction, particularly local government. A significant consideration of strategic spatial plans is public infrastructure (e.g. roads, water, electricity, waste removal, transport, and community facilities). Consequently an academic debate has considered the role of spatial plans in ensuring infrastructure provision (Healey et al. 2003) (Morphet J. 2011). This paper seeks to understand how strategic spatial planning has been used to provide public infrastructure and the success of the endeavour in the context of the City of Johannesburg.

The global experience of using spatial planning to guide public infrastructure provision through the academic debate has been generally negative (Matteringley M, Winarso H.2000) (Baker M, Hincks S. 2009) (Dodson J. 2009). A common challenge being acknowledged is the lack of implementation of infrastructure projects defined by a spatial plan.

The paper reviews an example where strategic spatial plans have been successfully used at the City of Johannesburg over the past ten years to guide infrastructure development and refurbishment. Central to the success of this endeavour has been the acceptance by a range of service providers of the need to prioritise spending given limited finances and to commit to an extensive process of negotiation to finalise the City's capital budget. The tool used to catalogue and prioritise projects based on the spatial planning priorities of the City is known as the Capital Investment Management System (CIMS). The paper highlights the fragility of the approach undertaken by the City of Johannesburg. A key tension is between infrastructure asset management plans which assess capital need based on the condition of existing infrastructure, and strategic spatial plans that use a City wide future based template to define this need. The second tension is the difficulty experienced in monitoring expenditure and the material success in directing capital funding.

Strategic spatial plans are meant to be about creating visions of the future, but they cannot be divorced from the existing material and institutional realities. This is particularly true in relation to applying strategic spatial plans to guide infrastructure development.

2. Strategic Spatial Planning

Strategic spatial plans and associated planning process is a means of taking selective decisions on future actions based on defined existing geographical areas for a defined population, often under the jurisdiction of a government administration (Morphet. 2011). It is essentially an American and European planning concept which has been extensively researched (Healey. 2006) (Albrechts.1992) (Faludi.2009) (van den Broeck.2008).

There is no common agreement of what defines the content of a strategic spatial plan. A view is that it is a plan focused on promoting the future economic development of a jurisdiction (UNHABITAT 2009). Another, is that the plans are there to promote sustainable development through identifying drivers for change' in complex economic, social, political and environment systems (Healey et al 2003). Alternatively, strategic spatial plans are perceived as a future vision for the urban form used to guide land use management decisions (ibid).

There is however agreement on what the process of strategic spatial planning entails. Simplified, it involves the definition of priorities and subsequent outcomes; the drafting of the strategic plan displayed geographically; the implementation of the plan; and the monitoring of the outcomes of the plan (Sartorio. 2005).

Methodologies for undertaking such processes vary and include: visionary incrementalism, objective setting; public participation; the use of a package of instruments or concepts; overcoming specific economic, social or environmental barrier approaches; or a combination of these methodologies (Ko et al. 2000). A common modus operandi is integration. Morphet (2009) argues that the integration of a strategic spatial plan must also occur within government in a horizontal fashion between sectors, but also vertically between other policy objectives of the administration.

3. Strategic Spatial Planning and Infrastructure Provision

Projects identified in strategic spatial plans as outcomes or 'drivers of change' are often service infrastructure related, aiming to meet the needs of the population in question. Morphet (2009) perceives service provision as the primary role of strategic spatial plans,

"the role of spatial planning is to deliver infrastructure within a local governance wide framework which comprises of a vision, objectives and shorter-term delivery plans" (Morphet.2009).

Yet despite this affirmation of the role of strategic spatial plans in service infrastructure provision the experience in the past ten to twenty years is that plans are not guiding infrastructure delivery (Morphet. 2011)(Wong and Watkins.2009)

The relationship between strategic spatial plans and infrastructure provision has been researched in a number of contexts. Studies reviewed included experiences in the United Kingdom (Baker M, Hincks S. 2009), Australia (Dodson J. 2009) and Indonesia (Mattingley M, Winarso H.2000). The outcomes of the reviews are sobering. The three case studies viewed

linking strategic spatial plans to projects as an important initiative to provide direction to development in a jurisdiction. The challenge arose in reconciling the outcomes of the spatial plan to the projects that were, or were not, implemented. The reasons provided for this disjunction included: lack of administrative coordination between planners, budget officials and project implementers (e.g. United Kingdom and Australia); contradictory policies (United Kingdom and Indonesia); political interference and the prioritization of either the cheapest and easiest projects (Indonesia); resistance from town planners who are used to land use management planning and not strategic spatial planning (United Kingdom). Even in Australia, a role-model for integrating strategic spatial plans with infrastructure provision, there are concerns that the broader integrative outcomes of the plans are being overshadowed by a single minded emphasis on public infrastructure provision (Dodson J. 2009). There is a sense from the literature that despite outcome monitoring occurring that the success of such plans cannot be measured by infrastructure projects completed, or the quality of the work. Success requires the commitment of all parties to accept a plan for an area in question and implement infrastructure interventions stipulated within the plan within agreed timeframes and standards.

There are key components, or aspects, of a strategic spatial planning that need to be considered, in order to ensure that there is coordination between the plan and provision of infrastructure. These components include:

1. The existing and future **population** that needs to be planned for. This Information is critical for modelling the appropriate infrastructure intervention.
2. The **location** of the infrastructure project must be defined accurately.
3. **Existing infrastructure capacity** – Without an understanding the condition of existing infrastructure one will not be able to know whether the existing population is adequately provided for.
4. The **nature of the infrastructure project (Project Type)** – A strategic spatial plan's outcomes may require service delivery to be done differently in the future in order to meet changing expectations (e.g. achieving environmental sustainability).
5. The **implementing agent** needs to take responsibility for executing a planned and budgeted for project
6. **Coordination of infrastructure delivery** between implementers of different infrastructure types is critical.
7. A **capital budget**
8. The **Sources of funding** used in paying for infrastructure.
9. **Implementation and Monitoring** (Wong and Watkins.2009)

In order for the above components to be used successfully certain tools and methodologies have been used to bridge the gap between planning and implementation of infrastructure

interventions. Examples of tools used, have been used or proposed in the South African context. The tools include:

1. **Infrastructure cost model** that considers population, population density projection, infrastructure demand, location, existing infrastructure capacity and cost (Biermann and Landre. 2002).
2. The **Municipal Infrastructure Investment Framework** (DBSA.2009) identifies infrastructure need based on infrastructure backlogs, infrastructure standards, population projections, an assessment of future requirements and a cost analysis.
3. **Computer based development models** and associated databases that would consider the range of components detailed above, and link these to custom made software to aid decision making in relation to where resources should be directed in relation to infrastructure provision. Multi-variable analysis is combined with Geographical Information Systems, financial management tools and engineering considerations. Examples include the Centre for Scientific and Industrial Research's Urban SIMS (CSIR. 2011), Integrated Infrastructure Management Environments as proposed by Mamoud Halfawy (2010) and the City of Johannesburg's Capital Investment Management System.
4. **Infrastructure Standards** or guidelines are the most common approach to define infrastructure requirements as a base for future development projections. There are numerous examples of this approach such as the South African Human Settlement Guidelines (CSIR.2000).

In the South African context, the strategic spatial plan used by municipalities is the Spatial Development Framework (SDF). With respect to conceptualising infrastructure SDFs typically use a set of common structuring concepts – namely nodes, corridors, open spaces and areas designated to the intensification of land uses. The focus infrastructure provision is generally poor. There is often little connection between proposed interventions in the SDFs and the execution of these interventions. Over the past five years there has been greater interest in linking SDFs to infrastructure implementation in the Country (Todes (2011)). The emphasis in these deliberations has been on the process to implement the infrastructure outcomes of the SDF and the plan itself.

4. The City of Johannesburg's Experience

The City of Johannesburg (CoJ) is located in the Province of Gauteng, South Africa. The City is located within the urban conurbation of Mogale City, Tshwane Metropolitan Municipality and Ekurhuleni Metropolitan Municipality and the less urban municipalities of Mid-vaal and Randfontein. It is one of the most populous cities in South Africa (COJ 2011) with an estimated

population of 3.8 million people within a broader provincial population of 10.5 million (CoJ 2011a)

The City of Johannesburg's planning regime is determined by the Municipal Systems Act of 2000 (DPLG.2000). It includes a 30 year strategic plan, the Growth and Development Strategy 2040; a 5 year medium term strategic plan, the Integrated Development Plan and three year operational and capital budgets.

5. *Spatial Development Frameworks*

The strategic spatial plan for the City, the Spatial Development Framework, is a component of the Integrated Development Plan. The Spatial Development Framework includes a hierarchy of local level plans namely: regional spatial development frameworks, urban development frameworks and precinct plans.

The key component of the Spatial Development Framework for prioritising infrastructure projects is the Growth Management Strategy. This strategy identifies those areas where, and when, the municipality should direct infrastructure investment. Priority areas include: marginalised areas (former black townships), transit orientated development corridors (as defined by the City's bus rapid transit system and rail network). Other areas in the City are given lower priority for future development and by extension, capital investment. The 'investment footprint' of the Growth Management Strategy is combined with an infrastructure coordination process that negotiates the three year capital budget for the City with technical departments. The computer based multi-variable tool used in this process to store and prioritise capital project information in the City is the Capital Investment Management System (CIMS).

Infrastructure in the City is provided by local government departments and government owned companies known as Municipal Owned Entities. For simplicity's sake these divisions will be referred to as departments.

6. *The Spatial Planning/ Infrastructure coordination process*

The Infrastructure Coordination process has been in operation since the formation of the City of Johannesburg in 2001.

The system was piloted at the Midrand Transitional Local Council in the late 1990s (Herman Pienaar 2011). The City Manager required a means of prioritising Ivory Park, a black township, for infrastructure delivery. The town planning department engaged with technical departments and determined the municipality's infrastructure need. A list of infrastructure projects for Midrand was determined. Subsequently the draft project list was prioritised based on the spatial imperatives.

When the Midrand Transitional Council was consolidated into the City of Johannesburg the concept of linking strategic spatial plans to infrastructure requirements was applied the City. During 2002/3 a Software/Civil Engineering collaborative was appointed by the City to develop a tool to facilitate this process. The operated by the Development Planning Department was the Capital Investment Management System (CIMS) (Herman Pienaar 2011). The function of the system was to facilitate the capture and prioritisation of infrastructure projects and reflect this as a capital budget.

Identification, prioritisation and finalisation of capital projects occur within the broader annual budgeting process of the City. The relationship is portrayed in Figure 1.

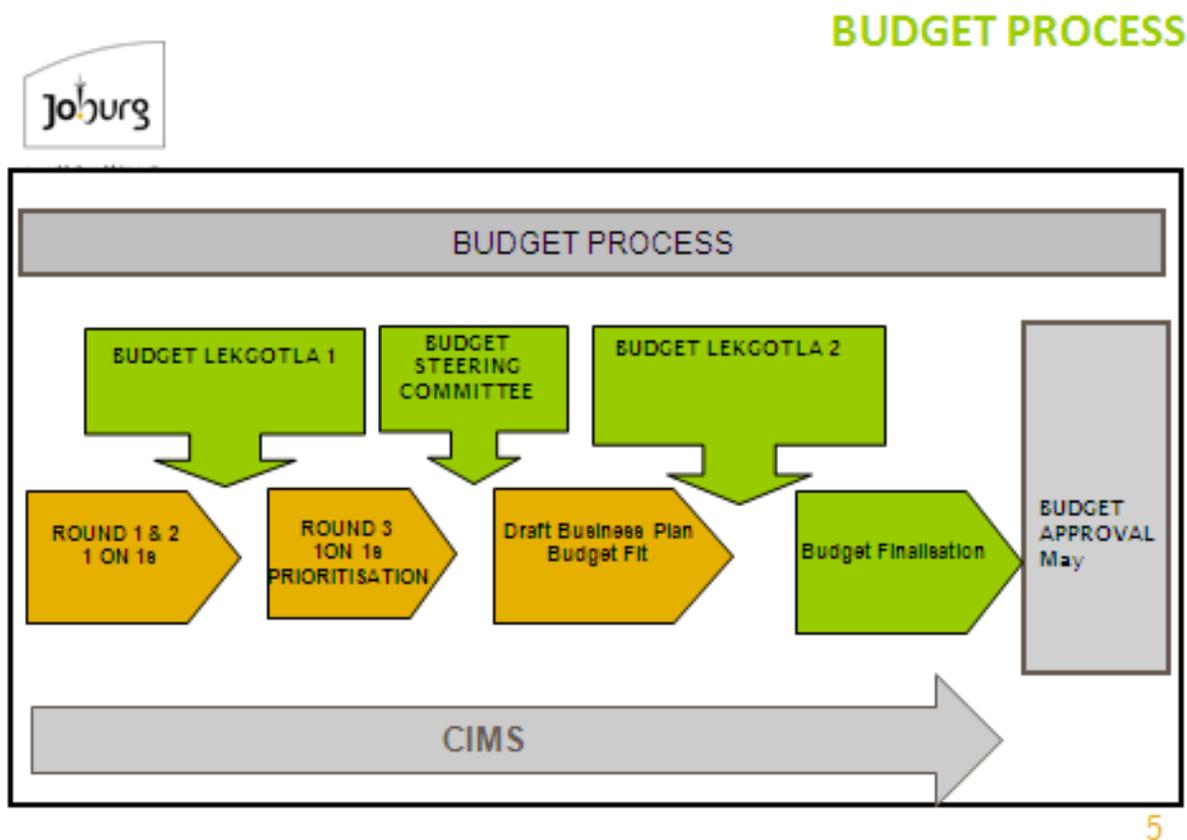


Figure 1: Diagram indicating capital budgeting process within the City of Johannesburg

Central to finalising project lists are sets of one on one meetings that the Directorate: Development Planning and Facilitation has with departments. These meetings are undertaken in order to ensure that departments are capturing their projects on CIMS correctly. The meetings also discuss the strategic prioritised list of projects against the Departments' own

priorities. The discussion attempts to balance the strategic intent of the City against the realities of infrastructure provision in the City.

Financial oversight of the capital budgeting process occurs through the Budget Steering Committee where a panel hears motivations from departments for capital funding in future financial years.

Political input into the capital budgeting process occurs at meetings, known as Lekgotlas. There are generally two Lekgotlas. At the first Lekgotla the broad principles for expenditure are determined. At the second Lekgotla the draft budget for the City is reviewed and inputs made.

The benefits of the CIMS and the capital budgeting process have been:

1. The provision of an annual process within the City whereby all departments' projects are represented on the same platform.
2. The provision of a single capital budget that is recognised across the administration.
3. The ability to link the strategic outcomes of the City as captured in the Growth and Development Strategy and Spatial Development Framework to specific projects
4. For engineering officials CIMS provides a platform on which the technical need can be assessed.
5. A means of directing a higher percentage of capital funding to marginalised and public transport areas for infrastructure service delivery where the funding will benefit the poor.
6. A means to achieve a consolidated overview of the sources of funding required by the City to fund new, refurbishment or operational capital projects.
7. Improved transparency for the public.

The challenges in implementing the CIMS system include:

1. The project list is only as good as the information captured on CIMS by the Departments. If this information is not correctly captured, this is the information that appears in the budget.
2. There is a tendency for departments and MOEs to redirect funding from projects in the budget that are located in strategic areas to other projects during the budget adjustment period. This is in the absence of effective administrative oversight during the adjustment budget process.
3. There is no means of verifying whether the CAPEX spend was spent on what was budgeted, and whether the infrastructure provided was of sufficient quality. The lack of an effective monitoring system is a major concern.
4. The prioritisation model used on CIMS is complex. This makes it difficult to communicate to departments and MOEs why one project is prioritised over another.

The capital budgeting process and the attendant CIMS system have been relatively successful over the past ten in guiding capital expenditure as a means of coordinating capital expenditure. The extent to which it has impacted on achieving the spatial outcomes of the City set out in the Spatial Development Framework is difficult to gauge in the absence of a comprehensive monitoring system. From a subjective perspective, certain areas, such as Soweto and the Inner City, have clearly benefitted from ten years of intensive capital investment. Other priority areas have not benefitted to the same extent.

The future of the capital planning process is closely bound to infrastructure procedures and to the financial processes within the City. Changes to these systems have significant ramifications for whether or not strategic spatial plans will continue to be linked to infrastructure budgeting.

7. Spatial Plans and Infrastructure Asset Management Plans (IAMPS)

The impetus for IAMPs to be undertaken in the City of Johannesburg was a raft of national policy that was introduced by the Department of Cooperative Governance and Traditional Affairs (COGTA) in 2007 and 2008 and was initiated by the Draft Municipal Infrastructure Support Strategy (COGTA.2007).

IAMP is a methodology by which existing assets are identified and monitored so that the condition of the assets of a given department can be ascertained, and that necessary interventions can be undertaken in order to maximize the asset's expected lifespan.

Similarly, Consolidated Infrastructure Plans (CIPS), in the context of a South African Municipality, consolidate the findings of all IAMPs to determine the overall conditions of the capital assets in question, and as a means to understand the infrastructure backlogs of the institution (Manqoba Soni 2011).

Infrastructure backlog in this circumstance is defined as:

1. The Apartheid backlog that resulted in a lack of service infrastructure in areas formerly reserved for Blacks, Coloureds and Indians.
2. The housing backlog which entails ensuring that all South African citizens have access to housing of an approved standard.
3. The maintenance backlog, which concerns the inadequate maintenance history of a municipality's assets. The backlog includes economic and population growth demands considerations in relation to infrastructure provision (SACN 2007).

The need for a standardized tool that assists in the on-going monitoring of the state of existing infrastructure cannot be questioned given the scale of municipal backlogs.

However, the policy does not consider how to integrate strategic spatial policy, in the form of the Spatial Development Framework, with the IAMPs or for the CIP. This was an acknowledged shortcoming by COGTA (Santhurie Naidoo 2011). The IAMP/CIP policy sees the strategic policy link between the CIP and municipal policy as the IDP and specifically the sector plans in the IDP (COGTA.2007b.p9) and not the SDF. This is problematic if strategic spatial planning is to have a future in guiding infrastructure delivery. The nature of IDPs varies from municipality to municipality, as does the level of detail in these plans. Whether the CIP can be 'linked' to the IDP in such a generic manner is questionable. If the current strategic objectives of the IDP is to be altered and driven by the contents of the CIP, the question arises as to whether service infrastructure need should be the only factor to drive infrastructure delivery outcomes?

Service delivery through the provision and maintenance of public infrastructure must be primary intention of a municipality. It is what a municipality are envisaged to do in terms of the Constitution (See 152b and Schedule 4 Part B of the Constitution (RSA, 1996)). However, achieving this intention means undertaking service delivery in a manner that achieves the other desirable outcomes that constitute 'developmental local government' (see 152 c-e of the Constitution (ibid)).

The constraint with IAMPs and CIPs is that the methodologies do not have the means to prioritise projects based on the other desirable factors. Neither does IAMPs/CIP have population projections for the municipality in question, nor a conceptualization of what the densities for a given area will be in the future. Nor do the IAMPs provide a spatial perspective. What IAMPs do provide is critical threshold information regarding infrastructure capacity and design. IAMPs also provide current and historical information relating to infrastructure costing.

What is required is a strategic spatial plan, in the form of an SDF that provides the outstanding information, draws on the IAMPs and CIP for information in relation to infrastructure provision, and prioritizing where new refurbishment and renewal projects are to take place based on priority areas identified in the plan.

8. Spatial Plans and Financial Procedure

The Municipal Finance Management Act's (no.56 of 2003) (Treasury.2003) intention is

"To secure sound and sustainable management of the financial affairs of municipalities and other institutions in the local sphere of government; to establish treasury norms and standards for the local sphere of government; and to provide for matters connected therewith."

The intention of the act is not to enhance service delivery or promote 'developmental Local Government' as per the Constitution (RSA.1996). Service delivery is not the primary outcome of the MFMA, financial prudence is (see also SACN.2007p68). This is not in and of itself a criticism of the MFMA. Sound financial management at municipalities is critical. But when commentators

criticize slow service delivery at the municipal level they need to realize that officials in municipalities work within a financial framework that is not geared to this outcome. Due to the effectiveness of National Treasury's implementation of the legislation the broad financial philosophy has become entrenched in South African Municipalities.

In relation to the City of Johannesburg there are two sections of the Act that influence planning for service infrastructure. The first relates to the municipal budgets set out in chapter 4 of the Act (Treasury. 2003). The second, relates to the acquisition of those goods and services in terms of Chapter 11 of the Act.

In relation to planning and budgeting it is the MFMA that legislates that:

1. IDPs provide the strategic framework for budgeting
2. Expenditure be linked to outcomes and goals as part of the budgeting process
3. That the project name detail be reduced and be standardized
4. Greater public participation be undertaken with residents and with other spheres of government in the finalization of budgets
5. A draft budget be finalised four months before the beginning of the financial year.
6. That formal adjustment budgets be tabled and that these occur once or year or under exceptional circumstances (SACN. 2007. p70).

From the above it may appear that the link between strategic plans and the budget would suffice to link financial sustainability and developmental local government. However, it is in the realm of the procurement of service infrastructure that the City of Johannesburg is feeling the burden of the MFMA's managerial emphasis. In this regard the establishment of tender committees (bid specification, bid evaluation and bid adjudication committees) depending on the complexity and the value of the tender concerned, have negatively impacted on Departments and MOEs ability to spend capital budgets (Manqoba Soni 2011).

The MFMA has become central legislation in defining how strategic spatial plans are linked to infrastructure provision within the City. Yet the linking of budgets to strategic outcomes is being negated in the City of Johannesburg because the budgets for capital projects are not being linked to actual expenditure, and that the procurement procedure is hindering the completion of capital projects in budget and on time.

9. Assessment

The City of Johannesburg has implemented a formal process by which strategic spatial plans have been used to direct infrastructure spending for over ten years. The use of defined and agreed to capital budgeting process has done much to mitigate against arbitrary political interference in the budget, and has provided a platform on which technical and strategic

considerations can be weighed. The process has also gained support for strategic spatial planning from technical departments.

The Capital Investment Management System has been a useful tool in providing a strategic spatial plan's budget that in turn provides the basis for discussions with technical departments and politicians

The capital planning process has also made a contribution to ensuring that capital is directed towards those areas in the City where infrastructure is needed most – marginalised areas, public transportation areas and priority areas requiring refurbishment.

However, it is in the monitoring and determination of the actual impact of the City's process to link its strategic spatial plans to infrastructure where the System has failed. While the CIMS system can indicate what is budgeted for in a given financial year, it does not provide what the actual expenditure was on a given project. This makes assessing the spatial impact of policy very difficult. It also opens up the capital budgeting process to challenges from other existing processes within the City Administration.

Two of these existing processes relating to Infrastructure Asset Management Plans and Financial Systems were discussed in detail. The challenge is to continually re-negotiate policy interventions where responsibilities of departments in relation to strategic spatial planning, budgeting and infrastructure provision intersect. As such the role strategic spatial plans play in guiding infrastructure delivery is far from secure, and shifts in relation to new policy interventions and changing staff compliments.

10. Conclusion

Unlike other cities, Johannesburg has had relative success in coordinating strategic spatial plans with infrastructure delivery over the past ten years. The success has been due to an intensive well defined capital budgeting process in conjunction with an internet database, CIMS, that prioritises projects based on the developmental outcomes of the strategic spatial plan. In addition, on-going support from technical departments and politicians has been critical to this success.

However existing policies relating to infrastructure and financial management mean that the strategic spatial planning's role has to be constantly re-negotiated especially in a circumstance where the impact of the capital budget planning process cannot be fully understood in the absence of detailed and consistent information relating to expenditure on previous annual budgets.

11. References:

Albrechts L. 1992. New Challenges for Urban Policy under a flexible regime of accumulation. *Landscape and Urban Planning* 22(1992) 189-203)

Baker M, Hincks S. 2009. Infrastructure Delivery and Spatial Planning: The case of English Local Development Frameworks. **Town Planning Review**. 80(2) 2009 173-196

Biermann S, Landre M. 2002. The Utilisation of Engineering Service Bulk Infrastructure Component in Integrated Development Planning. **Development Southern Africa**. Volume 19.No.2. June 2002

COGTA. 2007. Draft Municipal Infrastructure Support Strategy

COGTA. 2007b. Municipal Infrastructure: Roles and Responsibilities of National Sector Departments, Provincial Counterparts and Municipalities

CoJ.2010. City of Johannesburg: Spatial Development Framework 2010/11

CoJ. 2011. Joburg My City my Future. <http://www.joburg.org.za/gds2040/intro.php>

CoJ. 2011a. Draft Growth and Development Strategy for Consultation. 2 August 2011.

CSIR. 2000. **Guidelines for Human Settlement Planning and Design Vols 1 and 2** for the Department of Housing. Pretoria

CSIR. 2011. Minutes of Meetings taken by the CSIR for the Integrated Planning and Development Modelling Project process between CSIR and the City of Johannesburg – 4 March 2011, 17 March 2011, 12 April 2011, 3 May 2011, 20 May 2011

DBSA.2009.Development Bank of Southern Africa. Infrastructure Investment Training Workshop Manual – MIIF Municipal Infrastructure Investment Framework. Compiled by the Palmer Development Group Consultants

Dodson J. The 'Infrastructure Turn' in Australian Metropolitan Spatial Planning. 2009. Research Paper 25. September 2009. Griffith University

DPLG.2000. **Municipal Systems Act**. Act 32 of 2000

Faludi A. 2009. A turning point in the development of European spatial planning? The 'Territorial Agenda of the European Union' and the 'First Action Programme'. **Progress in Planning**. 71(2009) p1-42

Halfawy M R. 2010. Municipal information models and federated software architecture for implementing integrated infrastructure management environments. **Automation in Construction** 19 (2010) 433–446

Healy P, Albrechts I, Kunsman K. 2003. Strategic Spatial Planning and Regional Governance in Europe. **American Planning Association Journal**. Spring 2003. Vol 62. 113-129

Healey P. 2006. **Collaborative Planning: Shaping Places in Fragmented Societies**. 2nd edition. Palgrave Macmillan. London

Herman Pienaar. 2011. Personal Communication 23 August 2011

Ko R, Niegl M, Knoflacher H. 2000. A Strategic Planning Methodology. **Transport Policy** 15 (2008) 273-282.

Manqoba Soni. 2011. Manqoba Soni personal communication 22 August 2011

Mattingly M, Winarso H. 2000. Urban Spatial Planning and Public Capital Investments the Experience of Indonesia's Integrated Urban Infrastructure Investment Programme. Working Paper 113. Institute of Technology Bandung/University College London.

Morphet J. 2009. Local integrated spatial planning – the changing role in England. **Town Planning Review**, 80 (4–5) 2009 p393-414

Morphet J. 2011. **Effective Practice in Spatial Planning**. Routledge. London and New York

SACN. 2007. South African Cities Network: State of City Finances Report 2007. Colourpress

Santhurie Naidoo. 2011. Santhurie Naidoo personal communication 29 August 2011

Sartorio F. 2005. Strategic Spatial Planning: A Historical Review Approaches, its Recent Revival and an Overview of the State of the Art in Italy. **Discourse in Planning** disp162.3/2005

RSA (Republic of South Africa). 1996. **The Constitution**

Treasury. 2003. Municipal Finance Management Act. Act No. 56 of 2003.

Todes A. 2011. Reinventing Planning: Critical Reflections. *Urban Forum*. (2011)22:115-133.

UNHABITAT. 2009. Planning, Spatial Structure of Cities and Provision of Infrastructure. **Planning Sustainable Cities**. Chapter 8 p152

Van den Broeck. 2008. Strategic Spatial Planning and Strategic Projects. A transformative Practice. Presentation to the 44th ISOCARP Congress 2008

Wong C, Watkins C. 2009. Conceptualising Spatial Planning Outcomes: Towards an Integrative Measurement Framework. **Town Planning Review** 80(4-5)

System of incentives to urbanistic operations with municipal interest

Emilia Malcata Rebelo, CITTA

CITTA - Research Centre for Territory, Transports and Environment, University of Porto - Faculty of Engineering, Department of Civil Engineering, Territorial, Urban and Environment Planning Division; PORTUGAL

Abstract

The research reported in this article presents a proposal to develop a system of incentives to urban municipal-interest operations intended to improve the use of already existing buildings and sites that meet municipal strategic urban goals (despite these buildings and sites are valueless for real estate promoters). The current system of incentives proposes a device that vests municipal powers with the right to assign construction credits – that represent tradable edification rights -, directed to those that pursuit certain kinds of urban operations that refer, namely, to (i) repopulation concerns; (ii) rehabilitation of buildings (iii) restoration of heritage buildings; (iv) integration within the municipal domain of municipal land parcels aimed at green spaces; (v) demolition of existent buildings in urban spaces or spaces aimed at consolidation; (vi) promotion of buildings', infrastructures' and public spaces' energetic efficiency, and integration of bioclimatic concepts in a more efficient use of resources; and (vii) provision of additional parking in new urban operations with parking shortage.

Keywords: urban regeneration; construction credits; territorial management instruments; private initiative

Introduction

This research fits the revision of the juridical regime of the instruments aimed at territorial management, currently taking place in Portugal. The proposed system of incentives is an instrument of urban management that should be applied together with other planning and fiscal instruments (which revision is under way). The current assessment of the instruments aimed at territorial management is especially important in the scope of the current Portuguese economic crisis that strongly impacts on municipal finance and it pursuits the goal to provide municipalities with policy tools that enable them to defend and sustain the interests of their populations. These concerns are currently being approached by the revision of the municipal regulation of the system of incentives to urban operations with municipal

interest carried out by the municipalities of Lisbon and Porto¹ (the two main cities in Portugal, with rather important historical centres) (Câmara Municipal de Lisboa, 2012; Câmara Municipal do Porto, 2007)

Framework of official works

The main goal of the system of incentives to municipal-interest operations consists in the assignment of building credits to those that pursue urban development operations that meet the urban strategic goals stated in the correspondent Municipal Master Plans. This instrument of urban management is intended to be applied together with municipal development charges, special contributions, property transfers and compensations, and systems to assign the surplus-values engendered by plans to social uses.

According to n.º 3 of the 84th article of the regulation of Lisbon's Municipal Master Plan (Diário da República, 2012), the municipal regulation of the system of incentives to urban operations with municipal interest carried out by this municipality (Câmara Municipal de Lisboa, 2012) proposes a better use of the existing buildings, and sets a device to assign tradable building rights to certain urban development initiatives that pursue municipal goals (despite being valueless from a real estate promotion perspective).

As stated in point II of the preamble, these municipal interests refer to:

- Repopulation;
- Rehabilitation of buildings, namely:
 - Promotion of housing and protection of resident occupants;
 - Improvement of housing conditions, accessibility and building's security
 - Safeguard and valorization of the built heritage;
 - Energy performance and environmental sustainability;
- Incentives to the restoration of assets identified in the national or municipal heritage maps;
- Integration within the municipal domain of private parcels aimed at green spaces;
- Demolition of already existing buildings within green spaces or spaces assigned to consolidation;
- Support to the integration of bioclimatic concepts, and promotion of a more efficient use of resources, namely buildings', infrastructures' and public spaces' energetic efficiency;
- Provision of additional parking spaces in new urban development operations within the areas showing parking shortages.

In n° 2 of the 1st article, building credits are defined as tradable values ascribed by the town council to promoters of urban development operations that fulfil municipal-interest solutions stated in the Municipal Master Plan, according to a multi-criteria assessment that considers, namely, the location coefficient according to surfaces, and the land or floor surface. The number of building credits to grant is computed as a function of the merit of the operation (expressed in square meters as a multiple of the licensed building surface). This increase may take place either in the proper original operation or in another one, according to the rules stated by the Municipal Master Plan and in the current regulation. Maximum building indexes for the different types of spaces shouldn't be exceeded, neither should the maximum height or gable depth.

The project of municipal regulation of the information multi-criteria system in Porto city (SIM-PORTO) proposes a similar assessment, also based on the assignment of concrete building rights.

Methodology

The research herein reported proposes the adoption of the formula suggested by the system of incentives to urban operations with municipal interest carried out by the municipality of Lisbon, which is based on an exhaustive multi-criteria assessment:

$$CC = PP \times LO \times W/100$$

where:

CC – value of the building credits, expressed in square meters of floor surface, assigned to the urban development operation the request refers to;

PP – score assigned to the urban development operation concerning each criterion referred to in appendices II and III of respective regulation (an adaptation is proposed in Table 1)

LO – location coefficient, according to the considered surfaces:

- Residential areas or primary intervention areas (LO = 2);
- Systematic rehabilitation areas (LO = 2);
- Simple urban rehabilitation areas (LO = 1,5);

- Remaining city areas (LO = 1).

W – Floor surface or land surface on which the computation of the building credits is focused.

The assignment of building credits in urban rehabilitation operations or in the restoration of assets identified in the National or Municipal Heritage Maps starts with the request of an integrated inspection in order to assess the real estate asset aimed at rehabilitation (survey of its physical and preservation characteristics), followed by the assessment of the rehabilitation project according to a set of criteria (that supports the evaluation of the proposal in relation to the pre-existent situation).

The integrated inspection leads to the working out of inspection proceedings and of a technical report on the proposed intervention. The integrated inspection – carried out by a technician or a technical team with appropriate qualifications – points out the building pathologies and lack of functionalities, identifies the environmental and patrimonial values, and describes the socioeconomic situation of the resident households.

The technical report of the intervention, by its turn, should include the description of the proposed intervention based on the characterization reported in the inspection proceedings. Both the integrated proceedings and the technical report are, then, submitted for the approval of the entity entitled to assess the urban development operation (despite it may delegate this power to the heads of the municipal services or to the entities that manage urban rehabilitation societies or similar ones from legal or regulation grounds).

The assessment of the rehabilitation project finishes with the attribution of a score to the project that requested the license (or to the prior communication inherent in the urban operation) as a function of the following goals:

- Provision of dwellings subjected to a maximum rent or selling price;
- Promotion of housing and protection of the situation of its occupants;
- Evaluation of the housing qualification and security;
- Evaluation of safeguard and valorization of the built heritage;
- Integration of bioclimatic concepts and promotion of the buildings' efficient use of resources, namely energy ones.

The achievement of these goals is gauged as a function of the appreciation of the project in the light of the criteria and sub-criteria listed in Table 1 (considering the situation prior to the inspection proceedings):

Criteria and Subcriteria		PP
1	Provision of dwellings subject to maximum rent or selling prices	
1.1	It is expected that more than 75% of dwellings are subject to maximum rent or selling prices.	2,5
1.2.	It is expected that 50% to 75% of dwellings are subject to maximum rent or selling prices.	1,5
1.3.	It is expected that 25% to 50% of dwellings are subject to maximum rent or selling prices.	1
1.4.	It is expected that less than 25% of dwellings are subject to maximum rent or selling prices.	0,5
1.5.	The provision of dwellings subject to maximum rents or selling prices isn't expected	0
2.	Promotion of housing and protection of the situation of resident occupants	
2.1.	Keeping of households	
2.1.1.	Keeping of all resident households, regardless the existence of a rental contract	2,5
2.1.2.	Keeping of resident households that hold tenancy agreements.	1,5
2.1.3.	Keeping of more than 50% of resident households.	1
2.1.4.	Keeping up to 50% of resident households that hold tenancy agreements.	0,5
2.1.5.	There aren't any resident households or keeping any of the existing ones isn't expected.	0

2.2.	Keeping or installation of trade, services and other facilities compatible with the housing function	
2.2.1.	Creation of equipment within the scope of the social equipment networks, the educational act, the health equipment act, or the sports and/or arts act that belong to the heritage municipal map and/or other trade units relevant from the socioeconomic and cultural points of view.	2,5
2.2.2.	Keeping of historic or artistic reference shops that belong to the heritage municipal map and/or other trade units relevant from the socioeconomic and cultural points of view.	2
2.2.3.	Keeping of preexistent areas assigned to trade, services or equipment units compatible with the housing function.	1,5
2.2.4.	Keeping of the preexistent trade, services or equipment units and introduction of new units compatible with the housing function.	1
2.2.5.	Preexistent trade, services or equipment units don't exist or keeping any of the existing ones isn't expected.	0
3	Evaluation of housing qualification and safety	
3.1	Improvement in housing comfort conditions	
3.1.1.	Increase in housing quality patterns are expected with the execution of works in common internal and external areas and inside all the properties, including the upgrade in infrastructures.	2,5
3.1.2.	Increase in housing quality patterns are expected through the introduction of basic hygiene and comfort conditions, with the creation of autonomous kitchens and bathrooms and the execution of works in common internal and external areas (roofs, frontage and distribution areas), upgrading networks' infrastructure.	2
3.1.3.	Assures that legal requirements are met.	1
3.2.	Promotion of accessibility for people with restricted mobility	

3.2.1.	Improvement of accessibility conditions in common areas are expected with the introduction of lifts and/or other mechanical devices, and inside the properties through removal or reduction of architectural barriers, thus promoting the independence of inhabitants, and keeping it compatible with the preservation of buildings' constructive, typological or spatial characteristics.	2,5
3.2.2.	Improvement of accessibility conditions in common areas are expected with the introduction of lifts and/or other mechanical devices, compatible with the preservation of buildings' constructive, typological and spatial characteristics.	2
3.2.3.	Improvement of accessibility conditions in common areas are expected, that are compatible with the preservation of buildings' constructive, typological and spatial characteristics.	1,5
3.2.4.	Improvements in accessibility conditions in common areas and/or inside the properties are expected, at sacrifice of constructive, typological and spatial characteristics of the buildings.	1
3.2.5.	Improvements in accessibility conditions aren't expected.	0
3.3.	Consolidation and structural reinforcement of buildings aimed at reducing the seismic vulnerability	
3.3.1.	The introduction of a component of seismic reinforcement is expected, resorting to low-intrusive techniques compatible with the preservation of original buildings' typologies.	
3.3.2.	The introduction of consolidation and structural reinforcement measures are expected, at sacrifice of the maintenance of architectural and constructive characteristics.	
3.3.3.	The introduction of any measure of consolidation or structural reinforcement isn't expected.	
3.4.	Installation and updating of a detection and protection fire system	

3.4.1.	The introduction or upgrade of detection and protection fire systems is expected.	2,5
3.4.2.	The introduction or upgrade of fire detection means or systems isn't expected	0
3.5.	Provision of additional car parking spaces for resident people	
3.5.1.	The creation of additional car parking spaces for resident people is expected.	2,5
3.5.2.	The creation of additional car parking spaces isn't expected.	0
4	Evaluation of safeguard and valorization of the building heritage	
4.1	Conservation and rehabilitation of historic-heritage buildings	
4.1.1.	The execution of conservation or valorization works in classified buildings or in buildings being classified is expected, with recourse to heritage preservation and restoration techniques.	2,5
4.1.2.	The execution of preservation or alteration works that embrace the whole building is expected, from the perspective of a morphological and typological preservation, keeping the implantation surface and the preexistent roof shape in areas where these parameters may be changed.	2
4.1.3.	The execution of alteration works that embrace the whole building are expected, according to the admissible parameters.	1,5
4.1.4.	The execution of alteration and/or enlargement works that embrace the whole building are expected, according to the admissible parameters.	1
4.1.5.	The execution of preservation works in outside common areas are expected, namely frontages, gables and roofs.	0,5

4.2.	Exclusion of dissonant elements	
4.2.1.	The exclusion of dissonant elements that contribute to the architectural de-characterization of licensed buildings is expected, including, namely, the replacement of the buildings' original architectural language, the standardization in the design of the frameworks, and the transference of wiring from the frontage to underground infrastructure.	2,5
4.2.2.	The exclusion of some dissonant elements identified in the previous paragraph and under the same conditions is expected.	1,5
4.2.3.	The exclusion of non-licensed dissonant elements is expected.	0,5
4.2.4.	The exclusion of any of the considered dissonant elements isn't expected.	0
4.3.	Increase in the permeable surface of the public place and respective landscape treatment	
4.3.1.	The exclusion from the public space of licensed cultural valueless constructions is expected, thus enlarging the permeable surface and promoting its landscape treatment and valorization.	2,5
4.3.2.	The public space is expected to be cleared out without increases in licensed floor surfaces.	1,5
4.3.3.	The exclusion from the public space of cultural valueless constructions which lawfulness is not proved is expected, thus increasing the permeable surface and promoting its treatment and landscape valorization.	0,5
4.3.4.	Increases in permeable areas aren't anticipated, nor the existence of public space.	0
5.	Integration of bioclimatic concepts, and efficiency in the use of resources, namely energy efficiency	

5.1.	Implementation of measures to improve the energy performance and the quality of the inside air (according to the energetic and quality of inside air certification system)	
5.1.1.	The accomplishment of measures to improve the energetic performance and the quality of the inside air is expected, in order to increase the current energetic classification of the building in two classes, if the urban development operation is classified as a big rehabilitation.	2,5
5.1.2.	The accomplishment of measures to improve the energetic performance and the quality of the inside air is expected, in order to increase the current energetic classification of the building in one class, if the urban development operation is classified as a big rehabilitation.	1,2
5.1.3.	It isn't expected the introduction of any measures, even if the urban development operation is classified as a big rehabilitation.	0
5.2.	Promotion of the local production of energy that excludes the compulsoriness to install thermal solar systems from buildings' valorization	
5.2.1.	Installation of technologies to exploit renewable energies that warrant the local generation of a minimum of 25% of the expectable energetic needs, according to the computation methodology settled in the National System of Energy Certification.	2,5
5.2.2.	Installation of technologies to exploit renewable energies that warrant the local generation of a minimum of 15% of the expectable energetic needs, according to the computation methodology settled in the National System of Energy Certification.	1,2
5.2.3.	Installation of technologies to exploit renewable energies that warrant the local generation of a minimum of 10% of the expectable energetic needs, according to the computation methodology settled in the National System of Energy Certification.	0,75

5.2.4.	It isn't expected the installation of any technologies to exploit renewable energies.	0
--------	---	---

Table 1. Criteria and sub-criteria to assign scores to urban development municipal-interest operations (Source: Regulamento Municipal que aprova o Sistema de Incentivos a Operações Urbanísticas com Interesse Municipal” (Lisbon), adapted)

Conclusions and recommendations

The incentives proposed in this research fit into the overall concern to value what already exists, as they: (i) enable the cities to preserve their identities; (ii) thwarts urban degradation processes and the abandonment of ancient sites; (iii) supports private initiatives of urban regeneration and qualification, (iv) curb urban sprawl, keeping urbanization processes within the urban perimeters thus promoting the rational use of already existing infrastructures; (v) protect historical heritage sites and neighbourhoods, while contributing to lodge people into the existent urban fabric; (vi) improve the already existent heritage buildings and sites; and (vii) fosters community involvement in already settled neighbourhoods, thus upgrading the quality of their urban life.

Considering the methodology used and the common urban problems identified in historical centres, this research is applicable to other urban realities all around the world.

Endnotes

¹ “Regulamento Municipal que aprova o Sistema de Incentivos a Operações Urbanísticas com Interesse Municipal” (Lisbon); and “Projeto de Regulamento Municipal do Sistema Multicritério da Informação da Cidade do Porto (SIM-PORTO)” (Porto)

References

Câmara Municipal de Lisboa (2012), Regulamento Municipal que aprova o Sistema de Incentivos a Operações Urbanísticas com Interesse Municipal”, Plano Diretor Municipal de Lisboa

Câmara Municipal do Porto (2007), Projeto de Regulamento Municipal do Sistema Multicritério Informação da Cidade do Porto (SIM-Porto), Separata ao Boletim Municipal nº 3693, de 26 de Janeiro de 2007, Edição da Câmara Municipal do Porto

ID: 171, Incentives to Urbanistic Operations, '49th ISOCARP Congress 2013'

Diário da República (2012), Aviso nº 11622/2012 ; DR, 2ª Série, nº 168, 30 de Agosto de 2012

Delineation, transformation assessment and intervention initiatives for 'Grey zones' of Kolkata, India

Tapas MITRA, School of Planning and Architecture, Bhopal, India

Sheuli MITRA, School of Planning and Architecture, Bhopal, India

Synopsis: *This paper focuses on the aspects of dynamics of change in older residential areas of Kolkata, India, which do not necessarily qualify as 'heritage districts'. It assesses the areas from spatial, perceptual and socio-cultural perspectives and eventually presents a rapid appraisal template to initiate processes of developing design intervention strategies.*

1. Introduction: study background

The city of Kolkata has been documented and interpreted by authors of various backgrounds who have portrayed the city in its multiple and complex layers. The city, as is known, rose to prominence from the mid 18th century, as the chosen Capital of British India. As a natural outcome of being the seat of power, the settlement developed as a major urban centre of the British times providing the ambience and amenities befitting a capital city. Thus, public edifices representing British colonial architecture are strewn all across the city. As a result of this process of concentration of wealth, undeterred urbanisation occurred, and Kolkata grew to become a primate city with large concentrations of population. It also became a culturally vibrant city, being an arena for significant cultural movements. The city continues to represent the splendours of the Raj coexisting with abject poverty and squalor of the large in-migrant population.

The pressures of population on the city's economy and infrastructure over time coupled with the reduced political role of the city from a colonial capital to a provincial capital, has led to transformation of the city socially, spatially and perceptually. The many dimensions of this process of transformation have been documented through various seminal works on Kolkata, both in English and Bengali. The subjects of much of the critical writings on Kolkata are seen to focus majorly on three key aspects of the city- a) the Colonial Splendours, b) City and its poverty and c) City and its culture.

The focus of the old city areas in academic works has thus either been on the social and cultural setting, which existed in the colonial times or on the recent infrastructure inputs to the areas as urban renewal projects in recent times. Some attention has also been given to individual historic buildings and their conservation. There however, remains one area of interest in urban studies, namely, academic discussions on the **older residential neighborhoods** of the city, which has found comparatively lesser thrust in the context of Kolkata. The image of the city through the perception of its neighborhoods, as they exist in the collective memory of its residents, has not been a major area of focus in academic studies. One of the ways of understanding a city is about understanding its residential neighborhoods which form the major bulk of its building stock and are woven all over the body of the city. This, as classified by Rossi¹, is one of the two 'permanences' of a city. Significant work in this regard is found in the west, but has remained by and large unexplored in the Indian context. Kolkata, with its many layers of history and development, has many old residential areas, interwoven and strewn across large parts of the city. The visual and social character of these areas, possess an identity, distinct even today, from the newer planned areas of the city. The transformation which has occurred in them as a result of the city's growth is also of interest, as these areas form a large chunk of the city core.

This research work focuses primarily on the older residential parts of Kolkata, analysing them in spatial, perceptual and socio-cultural perspectives, and tries to capture the dynamics of transformation which has occurred therein.

2. Academic structure of the research

The Perception School spearheaded by Lynch², and the works of Jane Jacobs³ and Habraken⁴, have raised strong point against Modernist City planning advocated by Corbusier during the heydays of modernism in the 30s and 40s, which saw great architecture but not great liveable cities, where the automobile becomes the major protagonist and situates the participator (to borrow a terminology from Edmund *Design of Cities*⁵) in the automobile dominated realm. Jacobs and her compatriots strongly advocate local interventions and reorganisation of the urban fabric at the local levels as against the monumental urban renewal proposals that dominated the 60s American city planning practices. The whole movement of *New Urbanism* is an offshoot of this world view.

In the city of Kolkata, many of the neighborhoods are heavy with important architectural artefacts, but are more importantly, consistently made up of 'structures of the ordinary'. A large part of the 'native' or 'black' towns which developed over a period of time demonstrate the characters of this 'structure of the ordinary'. Interestingly, the temporal variations in the development of the different neighborhoods, give rise to variations in their perception and character. Notably, the older black town in North Kolkata forms a contrast to the newer neighborhood developments in South Kolkata, and the metamorphosis which they undergo over time.

The Perception School continues to be a major influence in the work of two other major thinkers, Tridib Banerjee and William C. Baer, who in their seminal book *Beyond the Neighborhood unit*⁶, use perception techniques to delineate the extent of what they call 'residential neighborhood areas' which disqualifies and outdates the neighborhood unit concept of Clarence Perry⁷ in his work of 1929.

3. The purpose and process of research

This work attempts to understand the city of Kolkata as a continuum of residential neighborhoods which form a predominant structure in its urban fabric. Perception of the inhabitants, presence of the past and the future, permeability within the neighborhood patches and the presence of the particular, the *solus locus*, as Rossi⁸ puts it; all form part of a combined approach in this study.

The present research work tries to identify the 'quintessential' Kolkata neighborhoods and examines them in the context of the city's development patterns.

The first part of the study establishes the morphology of the city and identifies parameters and attributes of defining the neighborhood typologies which fulfil the requirements of 'quintessential' Kolkata residential neighborhoods. The term "Grey Zone" as a definition of such areas is coined. In this part, a detailed inventory of works on city morphology and neighborhood structures, available in research works across the world, is critically examined and then the appropriateness of these available models, when applied to Kolkata, is also adjudged. The spatial structure of the city, its chronological growth and impact on older city areas are analysed. Selected case study areas are then identified as representative samples of residential neighborhoods in transformation, from the possible qualifying zones.

In the second part of the work, detailed surveys (physical, socio-economic and cultural) of the two chosen case study neighborhood areas of Kolkata, are undertaken. An examination of the data collected, reveals patterns of development and neighborhood transformation. The transformation of neighborhoods and also individual residential properties, are documented through chronological spatial data analyses and socio-economic surveys to understand household level transformations and the impact of these on neighborhood characteristics.

The study concludes with an analysis of the key attributes, which help retain the essence of

'quintessential Kolkata neighborhoods'. An attempt is also made to assess the vulnerability of neighborhoods to total transformations and identify the different attributes which are responsible for the transformation correlating their own inter relationship, which affect the dynamics of change. Based on the cumulative impact of the effect of these attributes, suggestive intervention strategies are put forward, with a commentary on the possibilities of taking this research forward.

3.1 Research methodology

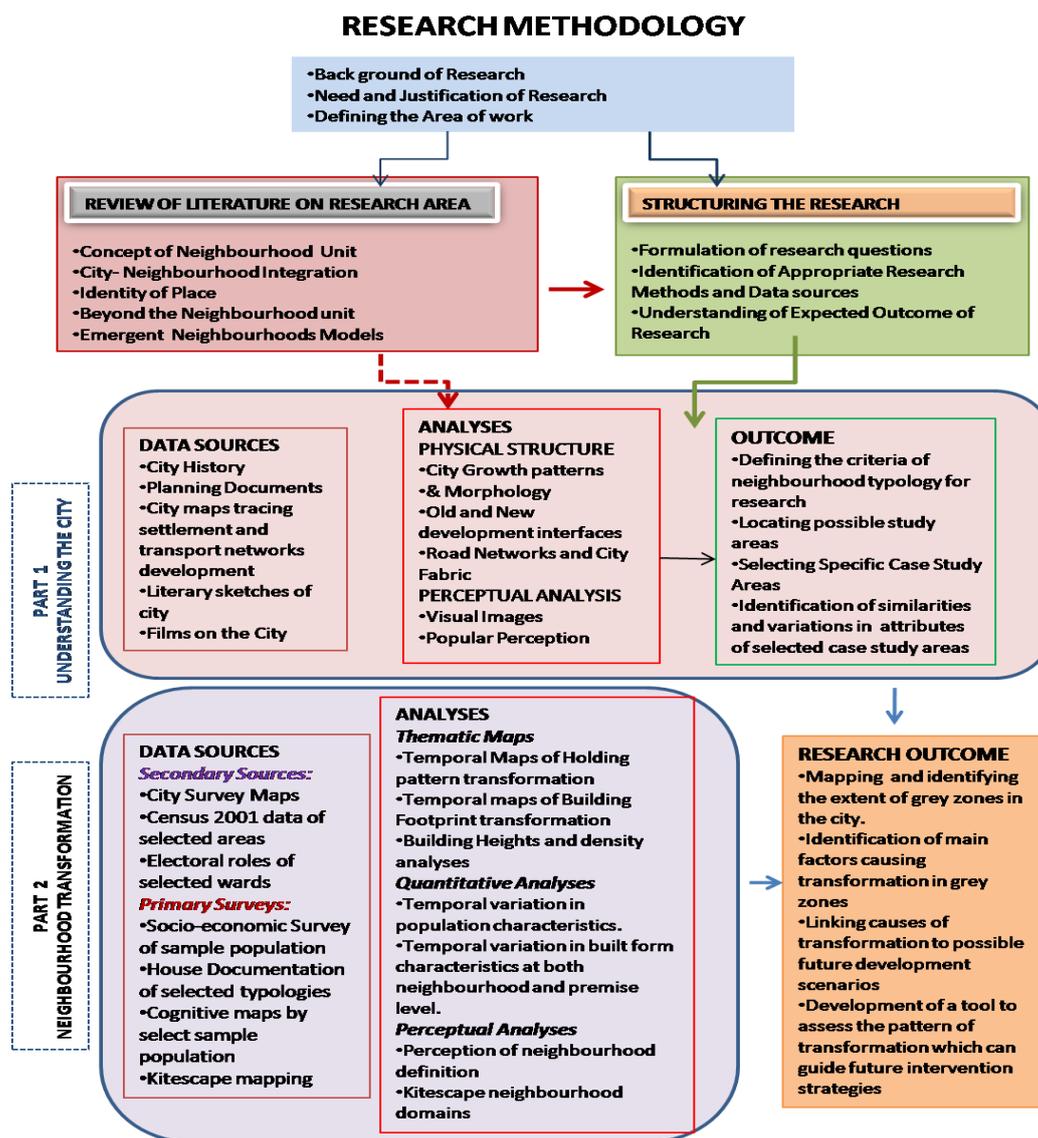


Figure – 1: The Methodology flow-chart (source: Authors)

The core focus of the present research work can be put forth by the following Research Hypothesis and sub-questions, which would be answered in the course of this research work, by application of various research methods and techniques.

The hypothesis to be tested is as follows:

If there is a pattern of transformation, there is a pattern of intervention. This is tested in the context of Kolkata's older 'quintessential' residential neighborhoods.

The sub-questions which have been answered to be able to test the hypothesis are as follows:

- A. Which areas of the city have neighborhood patches with 'quintessential characteristics' which can be identified for testing the hypothesis?
- B. Do all residential neighborhoods in old town areas have similar characteristics, or are there location-wise variations?
- C. Within a neighborhood, which are the attributes that contribute to 'transformation' of the built environment?

Sub questions A and B pertain more to the entire city with its structure and fabric as it is today. Through an overview of the chronological development of the city, the areas with 'quintessential characteristics' and criteria qualifying them as 'grey zones' are defined. This is followed by identifying the 'grey zones' at the city level and attempting to compare such grey zones for similarity or variations in characteristics. The next question, C would have to be addressed with reference to specific neighborhoods and analysing factors affecting change would have to be demonstrated with specific case studies of prototypical neighborhoods in transition. Case specific observations of more than one case study from different 'grey zones' would then be compared to find out how similar, causes of transition for different 'grey zones' are, and whether a common framework of intervention guidelines could be developed for all grey zone areas of Kolkata.

3.2 Research Techniques

Various techniques of data collection and analyses have been used in this research work as found appropriate. The techniques are discussed in the following section based on the classification of data targeting the three sub-questions.

- A. Which areas of the city have neighborhood patches with 'quintessential characteristics' which can be identified for testing the hypothesis?

In order to define which neighborhoods would qualify as neighborhoods with quintessential characteristics, largely references from secondary sources which discuss the history of the city and its development (social and spatial) were used.

References to documents on popular culture, cultural sketches from different periods of time, academic work on city growth and documents from planning organisations involved in city restructuring and new development works over a period of time, form the base for identifying the quintessential neighborhoods. Visual depiction of these neighborhoods in films and literature are also taken as bases for identifying key parameters of subject area definition. A rationalisation of perceptions and data is then done to list out the parameters which define neighborhoods with quintessential characteristics.

Other data sources referred to for answering this question, are city maps showing the chronological growth of the city, which help identify these 'grey zones'.

- B. Do all the residential neighborhoods with 'quintessential characteristics' have similar attributes, or are there variations based on different factors?

The areas are compared on the following parameters:

- **Street Network:** Satellite images and city maps are used to understand basic road and street network patterns in different parts of town and the impact on size and scale of the neighborhood blocks. These are analysed to find out if the patterns are similar or differ with locational differences.
- **Visual Impact:** A visual documentation of the streetscapes of some of these neighborhoods is undertaken, also to help identify visual attributes of neighborhoods in different parts of town.
- **Perceptual Image:** References to films and literary sketches set in different parts of the town, but all in these 'grey zones' are used to analyse perceptual similarities and variations in neighborhoods in discrete grey zones and the causes for these variations, if any.

C. Within a neighborhood, which are the attributes that contribute to 'transformation' of the built environment?

Attributes, which contribute to a neighborhood's identity, when modified, lead to transformation of the neighborhood, beyond the threshold of retaining the quintessential nature.

As this section forms the main body of the research, many different surveys were designed to obtain the required data in the most appropriate manner. **Two major case study patches** were selected from two parts of the city, **North and South Kolkata**, based on the findings of the previous section.

Each case study area is then analysed in terms of **Physical transformation**, wherein primary physical survey of the entire study patches is done to generate thematic maps for the following attributes:

- Present Land Use (roads, residential-non residential distribution)
- Time series maps of Holding size pattern (1910, 1950, 2011)
- Time series maps of Building Footprint (1910, 1950, 2011)
- Map of Building Heights, 2011.

Analyses based on the map generated:

- Percentage Distribution of road and plots areas within the patches and comparison between the two study patches.
- Quantitative Analyses of the maps on Holding Size showing transformation over time in holding sizes and comparisons between the two study areas.
- Quantitative analyses of built and un-built space in each study patch and comparison between the two study areas.
- Quantitative analyses of the heights of buildings and comparison between the two study areas.

Social attributes of the neighborhoods were obtained and analysed with Census Data (2001) and Electoral rolls (2010-11) and a primary socio-economic survey was conducted through survey questionnaires of a random sample of the households in the neighborhood.

For **Premise level variations and attributes**, Stratified sampling of the households and premises was done to get a fair representation of most types of houses in the neighborhood

to comprehend premise level transformations which affect the overall neighborhood area and generate clues for intervention scenarios.

Image and perception of the neighborhoods were generated through **Cognitive maps** and **Kitescapes** of the patches. The following snapshots from the city core portray the urban fabric and building typologies of a typical 'Grey Zone':



The urban fabric:

- The raised platform on the outer wall
- The corner grocery or the cigarette shop
- Little open space or the neighborhood park
- A certain patterned balustrade
- The occasional colonial lampposts

Figure – 2: Urban fabric of a typical 'Grey Zone' (source: Authors)



the building typologies:

- The central courtyard type building
- The common wall type connected at the roof level
- The balconies with certain patterned ironwork
- The projected plinth

Figure – 3: the building typologies within a typical 'Grey Zone' (source: Authors)

4. Delineation of the 'Grey Zones' of Kolkata

A study of urban morphology and transportation network at the city core of Kolkata, as depicted in the map below, helps delineate the 'grey zones' of the city.

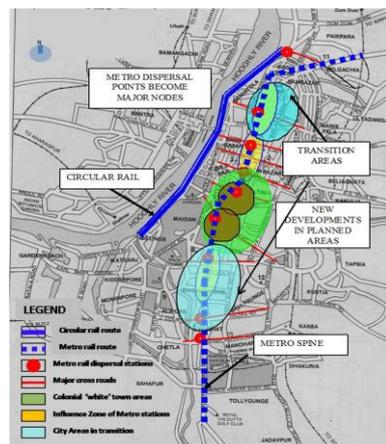


Figure – 4: Transportation network and city morphology (source: Authors)

It is observed that large areas along a major North-South Spine (Central Avenue under which the Metro Passes), even though are having the locational advantage of prime properties show stagnation and trends of a gradual degenerative process.

After the introduction of the Metro Rail, locations of the surface dispersal points have become major areas of passenger interchange, but inspite of this, the areas have not been considerably rejuvenated, nor have their land values escalated to the extent envisaged.

Due attention needs to be given to the 'block behind' – one block deep from the main artery where the built structures speak of a craftsmanship of a bygone era but the activities housed in them abuse the original structure to extents that mutilate the structures beyond recognition.

On taking a close look at the areas discussed in preceding sections which form the areas of research, following characteristics, which would help identify a 'grey zone' can be enlisted:

- Old city districts, which have undergone/are undergoing considerable transformation already, and neither possess a large number of individual buildings of historic relevance to qualify as a historic district.
- Areas where the overall built form however retain a flavour of the past and can in no way be confused with the anonymous new development of the remaining city.
- Areas located near major arterial corridors/ commercial districts of the city, having strong forces of land use change and redevelopment acting upon them.

These neighborhoods are representative of Kolkata. The ad-hoc and gradual transformations that have happened to the neighborhoods have not changed the perception of their essential character. They remain static in the collective memory, frozen in the frames of the films which have been made on them. The architect, urban designer and planners, who would work on neighborhood rejuvenation and housing intervention will have to work within these multiple layers of mythic spaces and changing urban structure. In the following map, it is evident that large chunks of the city fall under the 'Grey zones' which are formed along the north- south Metro spine and along the perpendicular street network which intersects it at intervals.

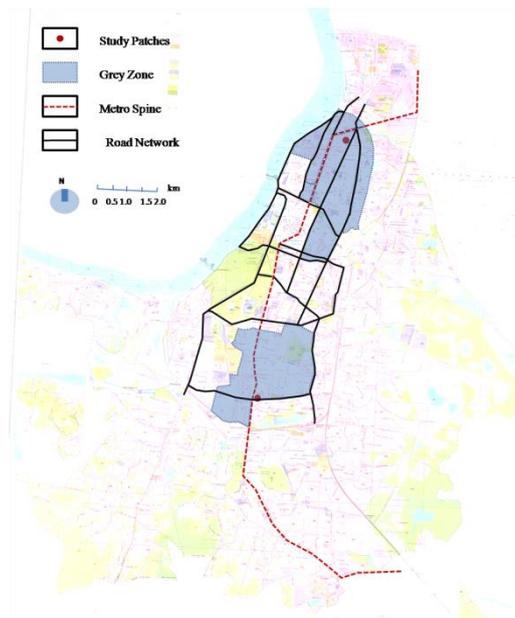


Figure – 5: Map showing 'grey zone' delineation, study patches, the Metro spine and major road network (source: Authors)

Having identified two residential patches in the 'grey zone' of Kolkata, empirical studies on physical transformations, socio-economic factors and perceptions of residents were conducted. Representative Housing typology documentation and transformation studies were also undertaken as mentioned in sub-section 3.2.

5. Conclusion; a development blueprint

The future of the neighborhood patch depends largely on the transformation that happens in each premise. The nature of new development that takes place then determines the transformed character. This new development is dependent on the existing bye-laws. In addition to the transformation scenarios discussed, the present building regulations play an important role in determining the character of the neighborhood.

In the present scenario, the impact on the visual character of the environment, over time, is presented in one of the case study areas in the following section through a series of three images:

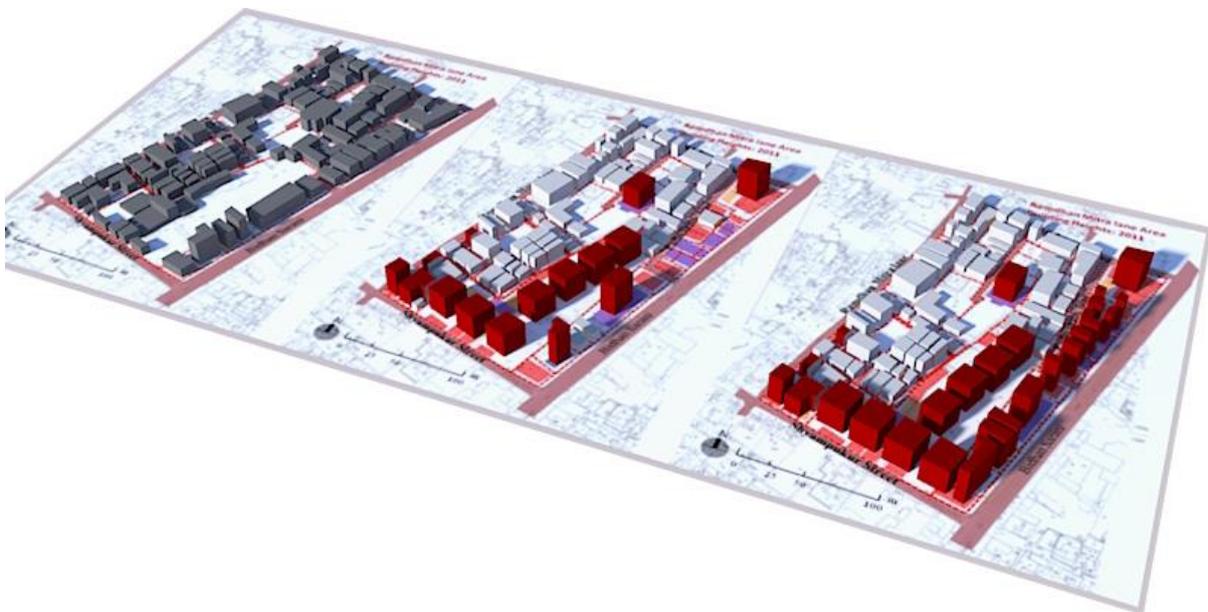


Figure – 6: *Ramdhan Mitra lane area (one of the study patches in North Kolkata): development scenario over time (source: Authors)*

The series of three images above depicts the gradual transformation in the physical fabric and hence the visual perception of the neighborhood over time, in the present context of development regulations applicable. The first image shows the existing fabric and the next two are possible future scenarios over time.

In the first stage of redevelopment, larger premises with few stake holders would be prone to new development. Vacant plot areas would succumb to market forces and start having new developments utilising maximum FAR, giving rise to clusters of blocks within the sanctuary areas in place of the open spaces. This would propel the transformation of the visual perception and character radically.

A review of the present day scenario reveals, that the clauses of the Kolkata Municipal Corporation Building Rules (2009), linking road widths to maximum permissible FAR and building heights, is one of the main reasons of transforming neighborhoods from their earlier forms. House owners and builders have chosen the ubiquitous apartment typology

developing in newer parts of the city as the preferred building typology even in these grey zones, to leverage on the benefits of height and FAR, wherever possible.

The result in the visual and perceptual impact on the streetscape and ambience of the neighborhood is depicted in the figure below through a comparison of the cases discussed above.

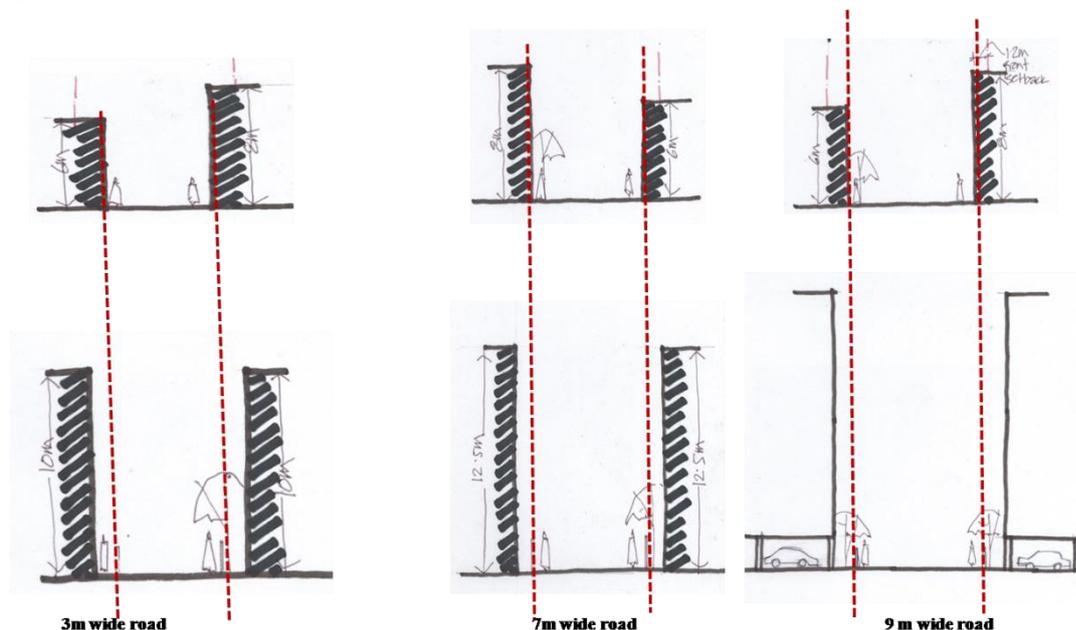


Figure – 7: *Early development and new development possibilities on different road widths*
(source: Authors)

The objective of the research work has been to establish the importance of entire neighborhoods in the imageability of the city and establish these areas as a distinct type of city zone. In this section it is argued that the existing building regulations are inadequate to handle the complexities of re-development in these zones and have actually contributed to the destruction of the imageability of these areas.

The need for:

- i. identification of 'grey zones' within the city,
- ii. declaring 'grey zones' them as a distinct type of zone,
- iii. working out a different set of building regulations and
- iv. introduction of urban design control guidelines for these areas

emerge strongly from the study.

At the individual premise/plot level, three possible outcomes can happen:

1. **Maintenance of status quo:** The existing building is in good condition and the socio-economic conditions have not changed significantly over time, and the building has retained its architectural expressions.
2. **Decay:** The structure has gradually decayed, because of various factors, some of which include, lesser use of the building due to outmigration, downgrading of socio-economic conditions, inability of aged family members to maintain the house etc.

3. Transformation:

- a. This may include modifications in the built structure to accommodate changes in family structure. This can either change the original character totally or can continue to retain the old characteristics.
- b. Other transformations may include demolition of old structures and construction of new buildings. The apartment typology has found much appreciation and has come up on many plots. However, there are no urban design guidelines for the visual expression of these new buildings.

And hence, upon summing up, it can be asserted that the emerging scenario of transformation would need a thrust in terms of intervention focus, mapping, as it were, a web of patterns of transformation to a pattern of interventions. The summary can be presented through the following figurative representation:

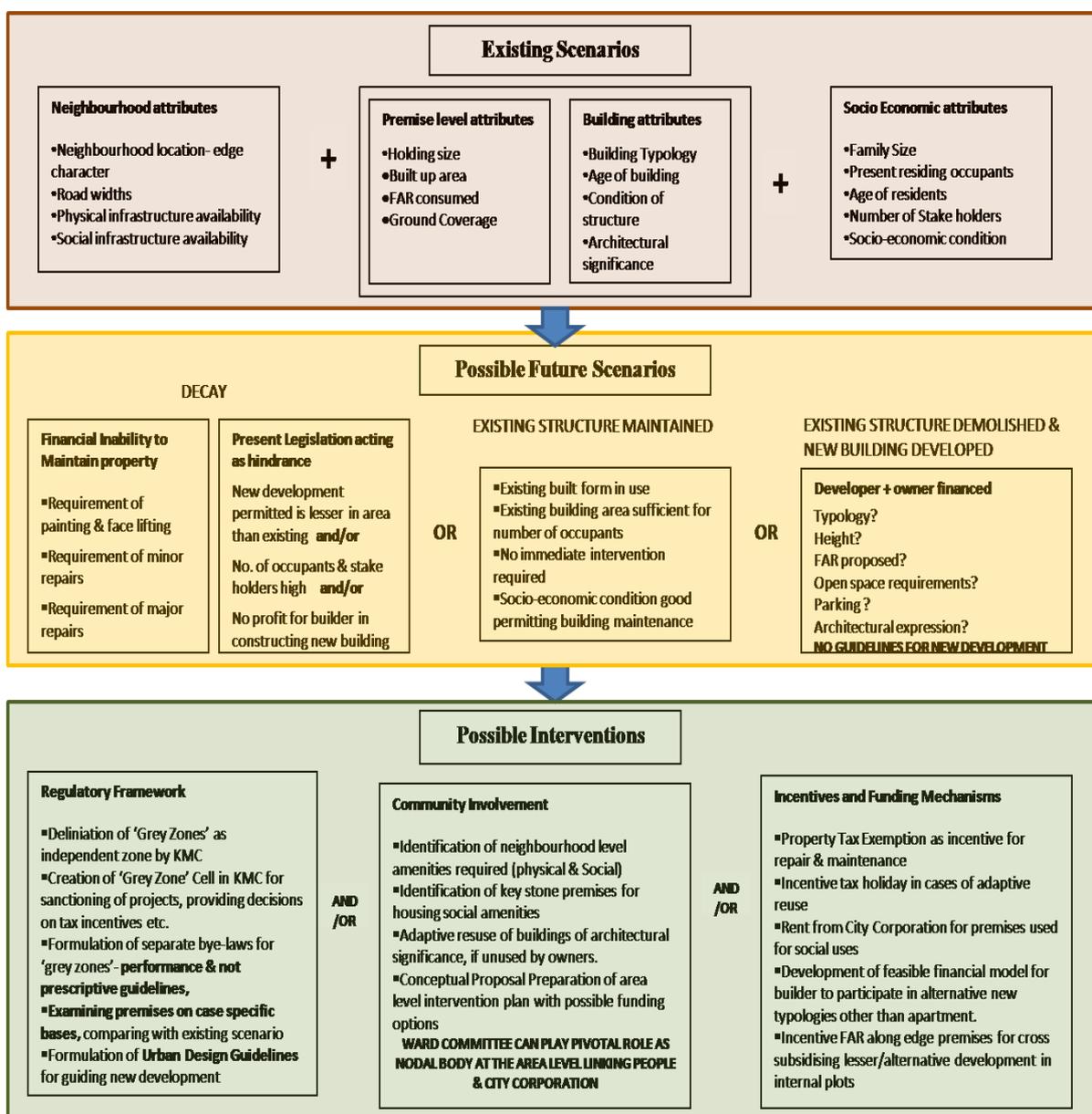


Figure – 8: Transformation- intervention patterns; a summary of findings (source: Authors)

The development which occurs on each plot is a result of the combinations of the values that each of them take in each class of attribute. A mapping of the individual values of each attribute for each plot and the links between them can give the pattern of transformation it will take. The cumulative patterns of transformation of all plots in the neighborhood, gives the overall transformation possibility for the patch. The interventions required can be suggested based on the pattern of transformation emerging.

A comparison of the two case study areas citing the main reasons for these transformations are represented graphically as under:

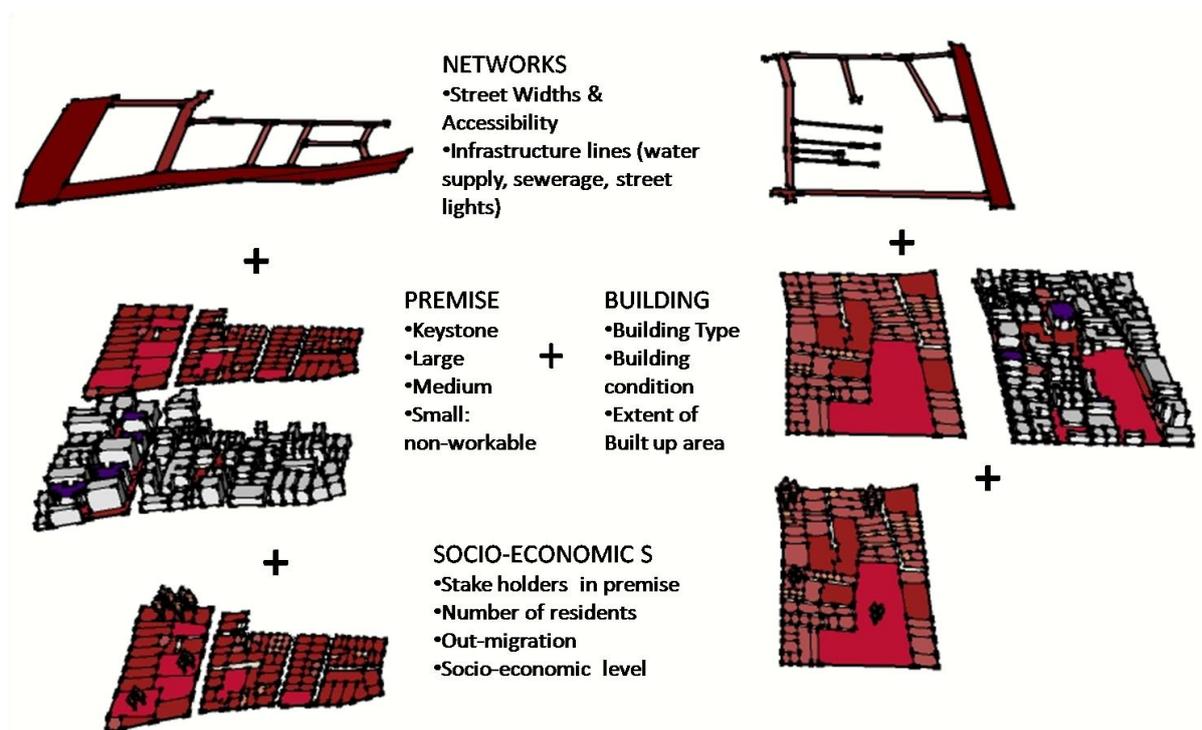


Figure – 9: comparison of the two study patches (source: Authors)

In the process of research of this study, it was found that the absence of base maps and the methods of mapping old city areas is a major cause of projects not taking off in these areas. A major hurdle in working in these areas is to find ways of rapid appraisal, which can initiate the path of project identification.

Through the methodology used in the research, a template of mapping the attributes identified along with their values has been devised, which can be used as a rapid appraisal tool to assess the health of the neighborhood and its propensity towards transformation. Based on patterns which emerge, a directory of possible thrust of interventions can be referred to, to identify the degree of intervention possible and the methods of appropriate funding required.

As shown in map (Fig.5), large parts of the core city area can be classified as grey zones. If the tool is applied to identify the causes of transformation and provide pointers towards the direction of intervention, for all the wards of the grey zones, many Urban Rejuvenation projects can be identified on priority basis and detailed project reports then submitted for funds which are available.

This research can contribute to accomplishing the first task of identification and prioritising of areas of intervention, from where access to project funds can then be garnered. A sample template which can be used to document the premise level characteristics and form a tool of rapid assessment of the pattern of transformation is designed. The pattern which emerges would be linked to the pattern of possible interventions to get the development blueprint guidelines. The template is presented below.

RAPID APPRAISAL OF NEIGHBOURHOOD: TEMPLATE FOR PREMISE TRANSFORMATION									
WARD NO. _____		STREET NAME _____		PREMISE NO. _____		OWNER'S NAME _____		DATA ENTERED BY, on date: _____	
ROAD NETWORK	PREMISE SIZE	GROUND COVERAGE	NO. OF FLOORS	BUILDING TYPE	BUILDING CONDITION	TYPE OF RESIDENTS	NO. OF RESIDENTS	NO. OF STAKE HOLDERS	OWNER-TENANT MIX
Road width < 2.4 m	Small (< 100 sq.m.)	Nominal (< 20%)	1 or 2 storey	Heritage bldg on large plot	Good	Large family	1 or 2 members	Many	Full owner
2.4 - 5 m	Medium (100-200 sq.m.)	< 50%	3 or 4 storey	Courtyard type	Medium	Scattered large family	3-4 members	Few	mainly owner
5-9 m	Large (200-500 sq.m.)	50-60%	5-6 storeys	Common wall type	Poor	Small nuclear family	5 members		Owner-tenant equal mix
9-15 m	Key stone (< 500 sq.m.)	High (> 60%)	G+4 or more with utilised parking	New bldg with mandatory open spaces		Old couple	6-8 members		mainly tenanted
Width > 15m			High rise with basement parking			Young Couple	10 or more members		fully tenanted

Figure – 10: The Rapid Appraisal template (source: Authors)

The template above is devised as a tool to map the interrelationships between various values of attributes. For a given premise, a single line joining the various attributes can be drawn. Each value of every attribute is marked with a colour code on a scale of red-yellow-green. **Each value that an attribute takes up, represents whether it resists transformation/is neutral to transformation (i.e. maintaining status quo)/ or is prone to transformation.** These three cases are depicted by the colours red, yellow and green respectively. The line which joins the values across attributes would pass through a combination of red, yellow and green dots and would suggest appropriate strategies for redevelopment.

5.1 Scope of further Research

The research methodology can be further developed by initiating pilot studies in various grey zones of Kolkata, using satellite images, updated Smart maps from KMC (survey maps of Kolkata to a scale 1:600 done between 1903 and 1910) and using the Rapid Appraisal Template developed. While undertaking this study it was noticed that while the attributes of transformation identified in this study are the prime factors affecting neighborhood character, there are other parameters which differ from case to case and have a bearing on the future of neighborhoods. The pilot studies would bring out specific attributes and further research could attempt to find the relative weight assigned to these additional attributes in case specific areas and modify the template further to account for these. Further research could

also extend to other cities having similar development patterns of juxtaposition of new and old areas. This would test the validity of the template and the methodology applied as a research method of a better informed decision making tool to develop city specific intervention strategies in older city core areas, to address their inherent conflicts between financial feasibility and place imageability.

References:

1. Rossi, Aldo (1966) *The Architecture of the City*, tr., Diane Ghirardo and Joan Oakman eds., Kenneth Frampton and Peter Eisenmann, Cambridge, Massachusetts, and London, England: The MIT Press.
2. Lynch, Kevin (1960) *The Image of the City*, Cambridge, Massachusetts, and London, England: The MIT Press.
3. Jacobs, Jane (1961) *The Death and Life of Great American Cities*, New York: Random House.
4. Habraken, N.J. (1998) *The Structure of the Ordinary*, Cambridge, Massachusetts, and London, England: The MIT Press.
5. Bacon, Edmund (1967) *Design of Cities*, New York: Penguin Books.
6. Baer, William C. and Banerjee, Tridib (1984) *Beyond the Neighborhood Unit*, New York and London: Plenum Press.
7. Perry, Clarence (1929) "The Neighborhood Unit, a Scheme for Arrangement for the Family-Life Community", *Neighborhood and Community planning, Regional Plan and Survey, Vol.7*, New York: Regional plan Association of New York.
8. Rossi, Aldo (1966) *The Architecture of the City*, tr., Diane Ghirardo and Joan Oakman eds., Kenneth Frampton and Peter Eisenmann, Cambridge, Massachusetts, and London, England: The MIT Press.

Expansion and Abandonment **The urban duality in planning metropolitan Lisbon**

Inês MOREIRA

CIAUD / Murbs – metropolitan studies and forms of urbanization research group
FAUTL (Faculdade de Arquitectura, Universidade Técnica de Lisboa) and
DUOT-ETSAB (Departamento d'Urbanisme i Ordenació del Territori, Escola
Tècnica Superior d'Arquitectura de Barcelona, Universitat Politècnica de
Catalunya)
Rua Sá Nogueira | Pólo Universitário | Alto da Ajuda |1349-055 Lisboa – Portugal
ineslmoreira@gmail.com

The paper addresses the expansion and abandonment of urban areas related to the presence of economic activities in metropolitan Lisbon, generated by the growth of the tertiary/quaternary sector and the process of deindustrialization, by discussing the policies and plans that have shaped them.

1. Expansion and abandonment in Lisbon's metropolitan area

The changes in the physical, economic and political context of the last twenty years have strengthened the transformations in the structure of Lisbon's metropolitan area, arising from processes of concentration of economic agglomerations specialized in the production, distribution and consumption activities. These changes are the product of the metropolitan infrastructuration and densification, resulting in a system of clusters of high concentration of economic activities related to the tertiary and quaternary sectors and, in parallel, the abandonment and restructuration of large peripheral industrial areas, with obsolescence processes, aggravated in the last decades.

The spatial production related to these activities reflects a set of economic dynamics, policy strategies and the national and external contexts, which are materialized in their morphology, location and functional specialization. However, the influence of the public policies over the territory is not direct, assuming various forms and creating conditions and opportunities that shape the urban morphology, the business investments and the behaviours of the users and inhabitants of the metropolitan area. The spatial articulation of these policies is accomplished through urban planning, determined by the public sector and with the primary objectives of predicting and regulating the urban development, by formalizing ideas and strategies that characterize a particular time context.

The following reflection about the spatial planning process is based on the interpretation of the policies as the support of the urban production and as the base for the construction and delineation of the planning instruments. Despite the difficulty of their dissociation or the identification of their localized impact, the public policies (economy, transports, technology and innovation, employment, etc.) reflect and have contributed to the shift from an economy centred on the manufacturing sector to a service economy. The industrial production model of concentration in large areas with high territorial presence was gradually altered to a *post-Fordist* model, characterized by the segmentation of the production cycle and its consequent relocation to distant places, inducing the growth of processing and distribution activities. The change from a local to a global economy resulted both in a cause as well as a product of the creation of a network of relationships, supported by the improvement of the transport of goods and passengers and the telecommunication innovations which allowed the contact over long physical distances.

Keeping pace with contemporary European cities and regions, Lisbon has suffered dynamics of rapid urban expansion and increasing functional complexity (George and Morgado, 2007). On one hand, after the 90s the pressure to adapt to the new economic and social demands of the emergent knowledge society, along with the setup of the mobility network, the motorization of the population and the changes in the way of inhabiting the city, resulted in a

distended urban system with axes of great concentration of economic activities related to the tertiary and quaternary sector connected to the transport infrastructure. On the other hand, the global changes in the industrial production processes and the restructuring of the economic system had consequences in the obsolescence of the vast peripheral industrial complexes, originating a wasteland landscape. Recently, the present economic and financial crisis has aggravated this trend, with the punctual abandonment of medium and small enterprises integrated in industrial and logistic clusters.

In this scenario, the main question addressed by the paper is the role of the public policies and planning in the creation of the segregated, marginal, expectant or abandoned (built and open) areas in the metropolitan dynamics, and how they may contribute to reduce these spatial discontinuities. The methodology is based on a theoretical approach in parallel with an empirical contact with the territorial reality, by resorting to fieldwork, cartographic and documental analysis of the public policies and planning instruments that respond to the dynamics of expansion and abandonment of specialized urban areas in Lisbon's metropolitan area, during the last twenty years.



Figures 1 and 2: Science and Technology Park Almada. Own elaboration, 2012.

2. *Europeization* and the national public policies

The recent institutional and social changes led to profound transformations in the functioning of the national metropolitan areas, with consequences in the land use, functions, structure and morphology, as well as in its governance. The growth of the real estate and its importance in the process of accumulation of capital in the cities resulted from the increase of the functional relation between the economic development, the control and regulation of urban uses (Portas et al., 2011).

The presence of economic activities is an important aspect for the competitiveness between municipalities, for its ability to create jobs and to attract population, complementary activities and infrastructure investment at the local level. Therefore, the presence of these activities is intended, but they often have incompatibilities with existing programs, such as agriculture or housing. This situation originates specialization and clustering in peripheral areas, with defined perimeters, for which infrastructure improvements are developed (often realized as counterparts negotiated between the public and private spheres). Moreover, the restructuring of the economic fabric due to the emergence of the knowledge society has introduced a new territorial issue, stressing the inadequacy of the existing industrial structures to the new challenges. Comparatively, despite the reduced area that the activities related to the quaternary sector occupy in relation to the heavy industry complexes, they have a greater capacity to generate wealth. In this sense, their location is in the centre of the competitiveness discussion, as happened in the past with the industries.

In the last four decades there was a political restructuring of Portugal, accompanied by economic and urban changes initiated with the opening to foreign markets by the integration of the EFTA, in the 60's (Lopes, 1996). Joining the European Union (EU) in 1986, preceded by a period of adjustment and consolidation of the democracy after the 1974 revolution, was the turning point for the process of public policy and planning restructuring. The access to EU structural and cohesion funds enabled the financing of strategic sectors, with a great

impact in the regional and sectorial development, as well as in the organics of the national planning activities. Thus, the approach to the planning of metropolitan Lisbon can't be limited to the national policies, since it was influenced by global interconnections and the EU integration and cohesion policies (Knieling and Othengrafen, 2009).

The strong centralization that marked the history of the Portuguese political system, until the establishment of democracy, led to limitations in the capacity of planning at regional and local levels. The inversion occurred after the European integration, stimulated by internal and external motivations – however, the process started before the revolution, since the demographic pressure on metropolitan areas and the need to provide infrastructures (energy, sanitation, mobility and telecommunications) demanded for a more complex urban planning activity. Subsequently, the decentralization of the political and administrative system, with the allocation of new powers to local authorities and the emergence of new territorial dynamics, as well as the involvement of Portugal in a growing number of European programs and actions in order to stimulate modernization and territorial development, contributed to greater openness to external influences and to the transformation of the centralized state (ESPON, 2006).

By joining the EU, Portugal integrated a group of countries and a strategic vision for common development, which policies have influenced the economy, politics and administration of the country. Although urban and regional planning isn't part of the EU's competences, common procedures and policies with spatial impact are translated locally through sectorial policies and legislation agreed between the member-states, and subsequently implemented in the national systems. Thus, the macro-economic, regional cohesion, environment, agriculture and transport policies, related to the financing, to spatial strategies and to transnational cooperation contribute to an homogenization of national systems (Dühr et al., 2010), allowing for the reshaping of the planning system, with direct impact over the metropolitan spatial dynamics, as may be observed in Lisbon.

The strong influence of the European policies in the transformation of the national territory had greater consequences on the metropolitan areas of Lisbon and Porto (Dühr et al., 2010), as prime locations for the concentration of economic agglomerations, wealth generation and as nodal points of international networks. The most present territorial impact of EU's sectorial policies was materialized in the infrastructure network, with the goal of supporting the macro-economic dynamics and allowing for the economy to open to international markets. In parallel, the shifts in the activities and employment structures and the change in the role of the state as market regulator and provider of services catalysed the attraction of multinational companies which assumed a strong presence in metropolitan Lisbon.

On the other hand, with the intention of reducing regional disparities in order to support the single market and the movement of people and goods, the common transport and European cohesion policies presented as objectives the creation of a trans-european transport network, encouraging sustainable mobility, as well as the construction of telecommunications and energy infrastructures within the EU. At national level, assisted by the Community Support Frameworks¹, the transport policy has stimulated the road circulation, through the construction of a network of highways articulating different parts of the country and establishing international connections. The setup of this network had a strong impact on the development of Lisbon's metropolitan area, by creating high connectivity areas in the periphery of the urban centres, with a strong attraction of activities related to processing, storage and distribution of goods (supported by the growth of trucking). The multinational companies that settled after the EU integration organize the production in different phases that are geographically separated, resorting to the mobility network for the movement of goods. This change resulted in the obsolescence of the vast heavy mass production industry complexes, built until the 70s, and the emergence of new industrial and logistics structures in locations of high connectivity areas.

The impact of supranational integration policies, or the *européanization*² process didn't occur solely through the EU funds, but also by the operational changes in the urban planning

process (Ferrão and Mourato, 2011). The consequences were fast, and the 90s were very active with regard to the production and approval of masterplans, supported by the new legislation³ for municipal planning (*Planos Municipais de Ordenamento do Território*) and driven by the access to funding. At the same time, the influence over the administrative processes through the introduction of a strategic dimension in the plans, as well as through the restrictions over the involvement of the public authorities, contributed to constrain the state's role in urban development, to stimulate the private sector's intervention and the increase of partnerships. The consecutive funds and the European programs specific for supporting urban regeneration (URBAN URBANACT, URBAN II and URBANACT II) contributed to stimulate the development of national urban policies integrating community guidelines, concerning territorial competitiveness, environmental awareness, sustainable development, urban regeneration and social cohesion.

With regard to the direct influence on the processes of urban expansion and abandonment related to economic activities, the EU policies were decisive, with a direct influence over the territory by the programming and application of funds. The first Community Support Framework (1989-1993) represented a major boost for the economy and for reduction of disparities in relation to the European average, concentrating several public initiatives through the creation of economic infrastructures, supporting productive investment, human resources development, improving competitiveness and industrial adaptation. There were large investments in equipment, sanitation infrastructure, energy and in the construction of the highway network, as well as programs to support the industry, of great relevance to metropolitan Lisbon – RENAVAL program (conversion of shipyard areas) that focused on the area of *Lisnave*, in Setúbal peninsula and the PEDIP program (industry development) which contributed to the effort of modernization of industrial structures, stimulated the economies of scale, as well as the introduction of interface structures between universities and companies such as the Science and Technology Park *Tagus Park*, in Oeiras.

The following Community Support Frameworks (1994-1999 and 2000-2006) benefited from the introduction of the cohesion fund, in 1994, with a high incidence over the environment and transports, with direct effects on the consolidation of the articulated highway network in the metropolitan area of Lisbon. The urban areas and their regeneration was also subject of specific programs, that have continued during the National Strategic Reference Framework-QREN (2007-2013), leading to the city policy-POLIS XXI, integrated in the operational agenda for territorial development.

2.1 Urban planning system in Portugal

The introduction of the Law on policies of Spatial planning and urbanism⁴ (*Lei de Bases da Política de Ordenamento do Território e Urbanismo*) in 1998, determined the policy framework for spatial and urban planning, as well as its territorial management instruments, articulating the various scales (national, regional and municipal):

- Territorial development instruments – National Program of Spatial Planning Policy (*Programa Nacional da Política de Ordenamento do Território*), Regional Plan (*Plano Regional de Ordenamento do Território*) and Intermunicipal Plan (*Plano Intermunicipal de Ordenamento do Território*);
- Territorial planning instruments – Municipal Plans (*Planos Municipais de Ordenamento do Território*): Municipal Masterplan (*Plano Director Municipal*), Urban Development Plan (*Plano de Urbanização*) and Detailed Local Plan (*Plano de Pormenor*);
- Sectorial policy instruments – plans with territorial incidence, from the responsibility of the various sectors of the Central Administration;
- Special nature instruments – Special Plans (*Planos Especiais de Ordenamento do Território*).

The delineation of this multi-level system and of the legal instruments of urban and regional planning began after 1974, through successive attempts to respond to the rapid and disorderly urban growth. However, despite the articulated and hierarchical definition of the

current territorial management instruments, their implementation fell short of its potential. As their definition was not simultaneous, extending over more than two decades, there were systematic delays in the programs' implementation that prevented the integration of a strategic dimension and the correlation between the different scales. From this situation arose numerous territorial fractures and the lack of dialogue in the metropolitan articulation of Lisbon, present among the first generation of Municipal Masterplans (PDM) produced in the 90s, the Regional Plan (PROTAML) from 2002 and still in force, and the National Program of Spatial Planning Policy (PNPOT), from 2007.

The spatial planning policies, expressed in PNPOT⁵, define the great options of relevance for the organization of the national territory, establishing the framework for the planning and management instruments. Additionally, it constitutes an instrument for cooperation with remaining state-members for the organization of the EU territory⁶. The integration of the EU options and visions in Portugal's territorial organization is present in the *European Spatial Development Perspective (ESDP)* with the explicit integration of the guidelines of the *Lisbon Agenda* (set in 2000). The objectives of strengthening territorial competitiveness, promotion of polycentric development and territorial cohesion are part of the strategic dimension that supports the increasing territorial specialization and the functional concentration of economic activities. The policies define the reinforcement of the infrastructure systems in order to support national and international connectivity (objectives 2.2 and 3.2) and the strengthening of cities as engines for development, investing in the knowledge economy and attracting foreign investment (objectives 2.3 and 2.4).

Along with the nationwide production of municipal legislation in the 90s, Lisbon's metropolitan area⁷ was officially established in 1991, and its PROTAML⁸ from 2002, defined as a strategic territorial development instrument. One of its goals is the definition of actions concerning land use, occupation and transformation of the territory, with a pivotal position between the national and municipal planning. However, regardless of the municipal efforts, the metropolitan area was formed by a fragmented set of uncoordinated masterplans, carried out without the prior presence of a supra-municipal metropolitan plan, as the PROTAML was simultaneously in preparation. The consequences were present in the first generation of PDM, in which the municipalities defined individual strategies for their economic development, promoting industrial and technology parks with locations related to the connectivity improvement provided by the implementation of the National Road Plan⁹ (Pinho et al. 2010). This fragmented approach to the territory reflected an individualistic planning by the municipalities that resulted in a centre-periphery dichotomy within their boundaries, giving rise to the definition of several peripheral areas for potential industrial and logistics occupation. This way, the identification of these *opportunity areas* generated their development, through the classification of land use for economic activities or the creation of strategic development programs.

Despite the direct influence of environmental, agricultural and transport policies on urban planning, which are formalized in the strategic instruments (PNPOT and PROT) that support the municipal planning, the European policies are diluted in the planning instruments through visions, in the adoption of concepts or in the implementation of programs (e.g. URBAN, PEDIP or URBANACT). On the other hand, although regional planning introduced supra-municipal coordination, the spatial planning activity is still based almost exclusively on PDM and Special Planning (related to protected areas, public water reservoirs, shorelines, estuaries and archaeological parks). The PDM defines zoning, functions, buildable indexes and generic regulation, while the Special Plans result from analyses and sectorial objectives that do not establish the dialogue between municipalities nor relate to their individual strategies (Portas et al., 2011). The lack of definition of national urban policies, until 2007, created a gap that allowed for the urban development to be structured by sectorial plans of infrastructure, private investments and municipal interests (Pinho et al., 2010).

The result of these past incoherencies is present in today's metropolitan reality, which relies on the spatial planning developed independently by each municipality, which was defined after the construction or from changes to the PDM, without an integrated vision for the

territory. This scenario presents difficulties for the identification of how plans, policies and built projects really changed and refocused the process and urban dynamics, raising a doubt about the effectiveness of the plans in response to the fragmentation of the urban space, their heterogeneity and excessive functional separation. The time difference between the polarization of growth and the production and approval of plans, suggests the need, on the one hand, for a normative regulation adjusted to the formal and spatial reality (Domingues, 2006), and secondly, the possibility of defining multi-scalar planning with varying degrees of formal definition, development rhythms and programmatic flexibility in order to deal with the uncertainty and the time factor.

3. Competitiveness as an engine for urban expansion and abandonment

Lisbon is the most dynamic region of the country, concentrating the highest population density and business turnover. Thus, this is territory where the greatest spatial transformations resulting from economic dynamics take place, and simultaneously this region gathers a large number of plans of different natures and scales – the metropolitan area of Lisbon comprises 18 municipalities that develop a set of plans for municipal planning, articulated with the regional spatial planning, special plans and the national policies.

The regional strategy *Lisboa 2020* (CCDRLVT, 2007) was developed for the implementation of EU funds between 2007 and 2013, in accordance with the objectives of the *Lisbon agenda*. The priority areas of development were science, technology and innovation, the environment and human resources development. In order to reduce the effects of the peripheral geographical location in relation to Europe, the strategic plan for the region promotes internal and international competitiveness, through the presence of industries organized around economies of scale and activities related to research and development. Thus, the strategy specifically addresses the issues of urban expansion and abandonment, by supporting the creation of specialized areas for interface between research and industry (Operational Program 1) and the revitalization of abandoned industrial structures and harbour areas on the north and south riverfront (Operational Program 3). In both cases, the integration in the transnational mobility network plays a role of great importance with regard to the competitiveness and attraction of new businesses and urban regeneration.

The territorial model of PROTAML, present in the revision of 2010¹⁰ (CCDRLVT, 2010), embodies all of these strategic options, resulting in a broad and articulated vision for the metropolitan area. It provides the principles for the integration of urban areas with high concentration of economic activities, represented in the *model of urban and economic systems*. These areas are interpreted as a network, through the enhancement of the functional polyvalence of the existing structuring agglomerations, creation of complementary areas supported by the projected mobility infrastructures and the regeneration of the large industrial areas. One of its main objectives is related to the adoption of a new territorial development model, which implements the principles of the compact city and polynucleation, where Lisbon is understood as a metropolis of two banks around the Tagus Estuary (CCDRLVT, 2010).

The competitiveness is presented as a set of objectives across the various planning documents at municipal and regional levels as well as in the national policy program, with the goal to create centres related to the quaternary sector, with the focus on knowledge production. Regionally, this vision aims at attracting private investment, the promotion of business parks, the establishment of new enterprises and the consolidation of the link between research and production. However, the issue of competitiveness is also part of the local agenda, leading to the competition between municipal entities in order to create conditions for the attraction of business. The result is the contradiction of the networking goal and the logics of territorial balance, with isolated actions and urban areas segregated from the surroundings.

In this context, parallel to other European metropolitan areas, new business parks have emerged in Lisbon's peripheral areas, supported by the blurring of traveling times and the high degree of connectivity (Graham and Marvin, 2001). Hence, the combination between the mobility network, the proximity to the centre and the existence of unoccupied spaces acted as a catalyst for the emergence of these new structures in strategic locations, with functions related with logistics, high technology industry, R&D, trade and leisure. These areas differ from the old heavy industry complexes with *fordist* production methods, by presenting different logics in terms of dimensions and of the relation with the infrastructure and the centre. Thus, after the 90s, this duality became clear, with the adoption of competitiveness policies with greater visibility in the urban expansion and the creation of new structures directed to the quaternary sector, while the old industrial complexes became obsolete and abandoned despite the efforts of the industrial update programs.

These dynamics are present in the expansion movement along the axis between Lisbon and Cascais, with the highest concentration of business parks, in contrast to the south bank of Tagus, where were located the large industrial complexes in Lisbon, currently abandoned or expectant. Paradoxically, this emergent new areas don't have a territorial presence comparable to the vast areas occupied by the industry in 70s or the logistic clusters in the 90s, but they assume a great economic importance, responsible for the centralization of financial and corporate sector, which makes this area the metropolitan economic centre¹¹.

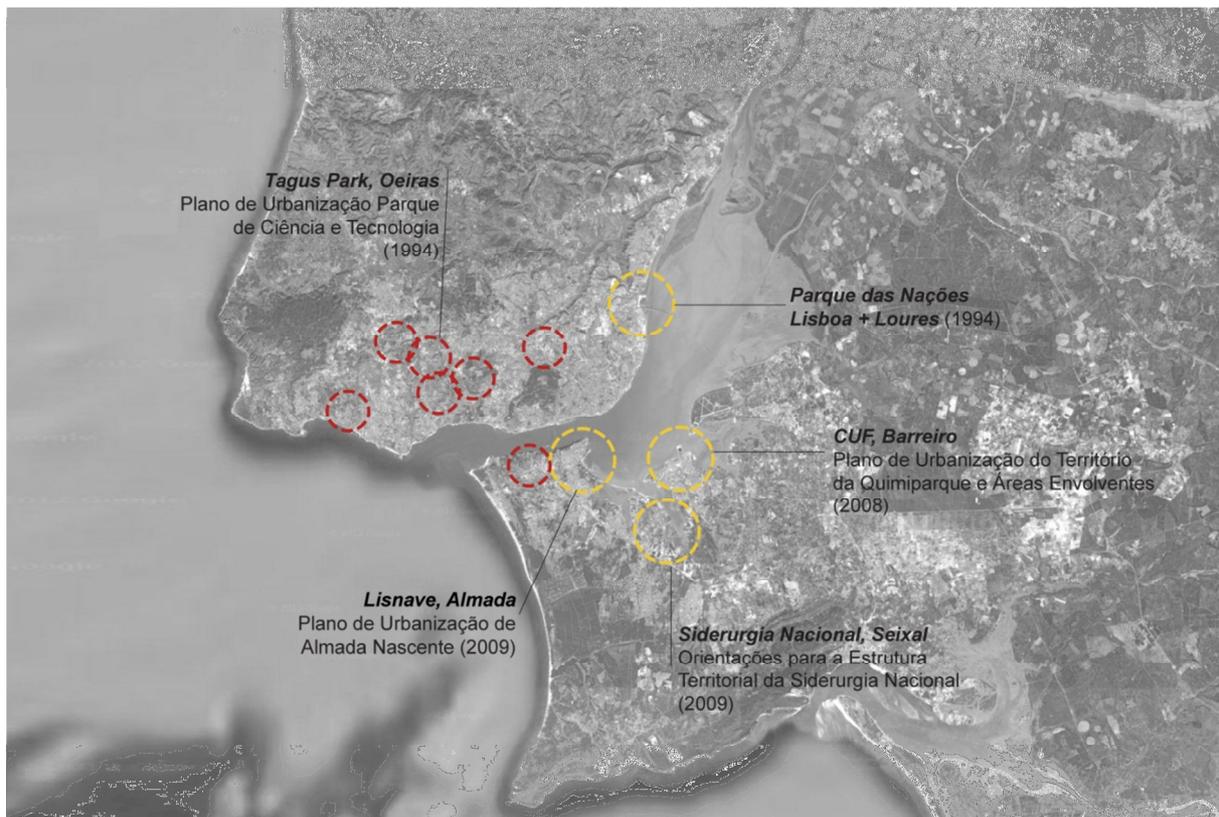


Figure 3: Identification of the Urban Development Plans and Detailed Plans that respond to the expansion and abandonment dynamics in Lisbon's metropolitan area. Own elaboration over images taken from *Googlemaps*, 2013.

3.1 Expansion and creation of new business areas

The process of urban expansion and the establishment of business parks along the Lisbon-Cascais axis began simultaneously with the production and approval of the Municipal Masterplans of the municipalities that form this axis (approved between 1994 and 1997). The business parks that have installed in this area during the 90s were oblivious to the criteria of zoning and the land uses that were later defined – the general criteria for their location logics

was related to the land availability and value, connectivity to the mobility network and synergies with complementary activities. Thus, the masterplans defined later the adjacent growth and intensification of the existing areas, contributing to the consolidation of the defined economic agglomerations, without specifically addressing the issue of urban expansion.

On the other hand, the municipal strategies for attracting the quaternary sector acquired an important presence in the municipal development plans, as exemplified by the PDM Oeiras. This plan expressed the intention of intensifying knowledge intensive activities by stimulating the creation of business parks and investment in technological industries. The strategic programs determined a set of territorial interventions that contributed to the achievement of the economic development model, with the inclusion of business parks (which concentrate offices, corporate headquarters and high technology industry).

The process of the establishment of the Science and Technology *Tagus Park*, in Oeiras, is an example of the materialization of competitiveness, economic, and innovation policies that resulted from the integration of European guidelines into national policies. In its origin was an Urban Development Plan¹², with an area of around 360 hectares in the municipality of Oeiras, the result of the conjugation of a local and a national strategy. In order to face the modernization and the need for technological innovation, the strategy aimed at increasing the international economic competitiveness, linking teaching to research and development. This was the first Science and Technology Park in Portugal, fruit of the *Economic Development of Portuguese Industry Program (PEDIP)*, integrated the First Community Support Framework (1989-1993), which outlined the steps towards the creation of this type structures at national level, proposing also a similar one for the metropolitan area of Oporto. In this sense, the park was established as an instrument of innovation policy and the formalization of a governmental will, integrated in a European competitiveness discourse, in order to respond to international competition, by promoting the interaction between companies, R&D institutions and universities, developing business, innovation and education.

The park opened in 1995 with the central buildings, but the process had begun in 1992, with the setup of a company (*Tagusparque – Sociedade de Promoção e Desenvolvimento do Parque de Ciência e Tecnologia da Área de Lisboa, S.A.*) responsible for its implementation and management. The project resulted from a public-private operation of municipal and national involvement, in which the public sector assumed a central importance in the start-up phase by attracting structural EU funds. On the other hand, the Oeiras Municipality has played an equally important role through the establishment of the *Integrated Plan for the Science and Technology Park*, part of PDM Oeiras. In this plan were outlined the basis for the construction of the *Tagus Park* and its surroundings, divided into five areas, conjugating residential and leisure uses to the science and technology activities, which occupied 200 hectares corresponding to 58% of the total area (Câmara Municipal de Oeiras, 1996).

The impact of this project relies on the setup of an interface structure between education and business, with the aim of upgrading industrial structures and the investment in research and development. This was the turning point for the transition to the knowledge economy, which would become one of the strategic objectives later defined in the PNPT policies in 2007. The Strategic Program for the *Tagus Park* promoted the logic of expansion and relocation of R&D activities, by their dissemination in the metropolitan area, as had happened before with the process of relocation of industrial activities.

However, the Urban Development Plan didn't promote the integration of Tagus Park in the surrounding urban fabrics. The special use buildings (Business Park, golf course, shopping areas) form an isolated cluster, segregated from the surroundings, with different language, morphology and character that don't relate to the existing urban fabrics.

3.2 Abandonment and transformation of old industrial areas

The heavy industry relocation to strategic areas in the metropolitan context, started in the 40s, led to the establishment of an industrial fabric located in direct contact with the mobility infrastructures. The large industrial complexes settled in the periphery of Lisbon along the railways and in the proximity of the harbour of Sado and Tagus. In this way, the current deindustrialized areas occupy prime locations at the riverfront and in the surroundings of urban centres that grew based on the employment provided by the former structures. These spaces constitute an opportunity in environment terms, for the decontamination of industrial soils, as well as in symbolic terms, in the contact with the river and in economic terms, with the urbanization these vacant areas.

In parallel to the loss of importance of the heavy industry and its inability to adapt to new technologies, there was a general awakening to environmental and urban quality, expressed in public policies. This vision supported, the increasing importance of the tertiary and quaternary sectors, as well as the emergence of a widespread awareness about biophysical and environmental aspects. The regeneration project of Parque das Nações, in the former industrial area of Lisbon, in 1998, was a model for the process of industrial activity removal and the consequent reconversion of the industrial area.

This project represented a radical intervention in an area of great potential, which importance lies not only in the created spaces as well as in the opportunity of regeneration of obsolete areas. The Expo'98 international event was the engine for this redevelopment in the eastern part of Lisbon, with a strategy based on new infrastructure, programmatic mixture and the articulation between the city and the old harbour, resorting to an Urban Development Plan and to six Detailed Local Plans. The example of the Parque das Nações started the debate on urban regeneration and metropolitan integration of former peripheral industrial areas.

The identification of this other type of *opportunity spaces* is present in the regional strategies, (expressed in PROTAML) and in the municipal masterplans, leading to the discussion and reflection about the obsolete industrial areas on the left bank of the Tagus. In order to deal with this issue, a management company *ARS (Arco Ribeirinho Sul)* was created and, in partnership with the municipalities, presented a set of actions for the regeneration and urban revitalization of these areas – Almada (where *Lisnave's* shipyard was located), Barreiro (where *CUF* was located) and Seixal (where *Siderurgia Nacional* was located). The main objective of this action was the recentralizing of the metropolitan area, promoting a social, economic and environmental balance between the two banks of the Tagus. However, reflecting the current financial and economic crisis, the implementation of these projects was stopped indefinitely, as well the projects of transport infrastructure planned for the region.

The Urban Development Plan *Almada Nascente*¹³, approved in 2009, was developed for an area that occupies about 115 ha at the city's riverfront and extends from Cacilhas to Arsenal do Alfeite, including the area of the former *Lisnave's* shipyards. After the activity of the shipyard was stopped, in 2000, an urban regeneration project that promoted the contact between the city and the river was developed, through an international competition that selected the design team (Consortium *ATKINS, Santa-Rita Arq^{os}, Richard Rogers Partnership*). The plan proposes a close relationship with the riverfront, through the construction of a marina and cruise terminal, eco-park, occupation by diversified functions and cultural facilities while maintaining the industrial memory that characterizes the local identity.

After a large number of initiatives that have emerged from the identification of the declining activities of *Quimiparque* (former premises of *CUF*), a preliminary proposal of the Urban Development Plan *of the territory of Quimiparque and surrounding areas* was presented in 2008. The plan is the result from the consensus between the owners and the Municipality of Barreiro over the need for a planning instrument to guide the change of land use, the soil decontamination and accounting for the project the third Tagus bridge, in anticipation. The regeneration of this brownfield plays an equally critical role for the metropolitan development, present in PROTAML as an area capable of generating new economic dynamics and

improvement of environmental quality for the region, implementing the strategic vision which classifies Lisbon as a city-region and development centre of the country.

For the area of the former national siderurgy, a document designated *Guidelines for the Territorial Structure of Siderurgia Nacional* was produced, integrated in the revision of PDM Seixal. This document constitutes the first step for the preparation of the Base Program that sets the guidelines for the conversion process of this area, with 535 ha and a significant environmental liability that arises from the steel production. This vision aims at the urban and environment articulation, through soil decontamination, creation of a new port terminal and recreational facilities. The industrial activities currently operating in the Industrial Park of Seixal, after the siderurgy ceased its activity, are integrated in the plan, as well as a new multifunctional area in the north and a business area in the south, connected by green corridors in order to integrate the urban centre, the productive areas and the riverfront.

4. Planning for Uncertain Times?

Despite the efforts of coordination between the national and metropolitan planning with the local planning, the implementation of public policies at the municipal scale related to the urban expansion and abandonment still lacks a supra-municipal articulation and more specific planning tools.

The ability to generate wealth and the business attraction promoted a sectorial approach to the territory regarding the classification of land use and functions. The production of municipal masterplans, held at the municipal scale, creates introspective and fragmentary logics for the metropolitan area. The specialized areas relate directly to the economic dynamics and transport, which projects are developed regionally or nationally, ignoring the municipal limits, and in this sense, the plan for these specialized areas should follow the same logics and relate to a broader area overstepping the municipal borders. This means that the articulation and strategy for the spaces for economic activities, in regards to the logics for urban expansion or revitalization and reuse of abandoned obsolete spaces, should be conceived based on the coordination between the local scale and the metropolitan territory, as the coherent space for the competitiveness discourse and for establishing regional networks.

A response to nowadays' uncertain times requires an approach to the territory which combines these different scales, creating concrete bridges between national, metropolitan and municipal authorities, in order to find new connections through an operational project (Meijmans, 2010), joining the demands of planning with the project concerns, with the convergence of the different parties in order to give rise to changes in the global system (Weller, 2006).

This way, the role of the planning would undergo the creation of an articulated global structure with the comprehensive integration of abandoned spaces, emerging specialized areas and the spaces with ecological potential. By redirecting the need for expansion to the reuse of abandoned areas, the investments could focus on the redevelopment of the brownfields by promoting functional mixture and exploring their potential symbolic relation to the Tagus estuary.

References

- Câmara Municipal De Oeiras. (1996) Plano Integrado da Área do Parque de Ciência e Tecnologia. In: Oeiras CMD (ed). Diário da República, Série II em 16/01/96, nº13, 708- (67).
- Carvalho Ac. (2010) Anuário Estatístico da Região Lisboa 2010. Lisboa: INE.
- CCDRLVT. (2007) *Lisboa 2020. Uma estratégia de Lisboa para a região de Lisboa*, Lisboa: Comissão de Coordenação e Desenvolvimento da Região de Lisboa e Vale do Tagus.
- CCDRLVT. (2010) *PROT-AM, Proposta técnica final*, Lisboa: Comissão de Coordenação da Região de Lisboa e Vale do Tagus.

Domingues A. (2006) *Cidade e Democracia: 30 anos de transformação urbana em Portugal*, Lisboa: Argumentum edições.

Dühr S, Colomb C and Nadin V. (2010) *European spatial planning and territorial cooperation*, UK: Routledge.

ESPON. (2006) ESPON project 3.2.3: Governance of Territorial and Urban Policies from EU to Local Level. Final report. Luxemburg.

Ferrão J and Mourato J. (2011) Evaluation and Spatial Planning in Portugal: From Legal Requirement to Source of Policy-learning and Institutional Innovation. In: Dasí JF (ed) *De la Evaluación Ambiental Estratégica a la Evaluación de Impacto Territorial: Reflexiones acerca de la Tarea de Evaluación*. València: Publicacions de la Universitat de València, 141-166.

George P and Morgado S. (2007) Área Metropolitana de Lisboa 1970-2001. De la monopolaridad a la matricialidad emergente = Metropolitan Area of Lisbon 1970-2001. From monopolarity to an emerging matrix pattern In: FONT A (ed) *L'explosió de la ciutat : morfologies, mirades i mocions sobre les transformacions territorials recents en les regions urbanes de l'Europa Meridional*. Madrid: Ministerio de Vivienda, 62-85 (edição revista).

Graham S and Marvin S. (2001) *Splintering urbanism : networked infrastructures, technological mobilities and the urban condition*, London: Routledge.

Knieling J and Othengrafen Fe. (2009) *Planning cultures in Europe: decoding cultural phenomena in urban and regional planning*, England: Ashgate Publishing Limited.

Lopes JS. (1996) A Economia Portuguesa entre 1960 e o início da década de 90. In: Barreto Ao (ed) *A situação social em Portugal, 1960-1995*. Lisboa: Instituto de Ciências Sociais da Universidade de Lisboa, 235-363.

Meijmans N. (2010) The regional research project - a mode of operation to advance. In: Meijmans Ne (ed) *Designing for a region*. Amsterdam: SUN Architecture, 8-23.

Pinho Pc, Oliveira V, Cruz S, et al. (2010) SUPERCITIES: Sustainable Land Use Policies for Resilient Cities. FEUP, FAUTL.

Portas Nc, Cabral J, Domingues A, et al. (2011) *Políticas Urbanas II - transformações, regulação e projectos*, Lisboa: Fundação Calouste Gulbenkian.

Waterhout B, Mourato JM and Böhme K. (2009) The Impact of Europeanisation on Planning Cultures. In: Knieling J and Othengrafen Fe (eds) *Planning cultures in Europe: decoding cultural phenomena in urban and regional planning*. England: Ashgate Publishing Limited, 240-254.

Weller R. (2006) An Art of Instrumentality: Thinking Trough Landscape Urbanism. In: Waldheim Ce (ed) *The Landscape Urbanism Reader*. New York: Princeton Architectural, 70-85.

¹ Since the EU integration, the community support to Portugal was divided into five phases: between 1986 and 1988 (Previous Regulation), between 1989 and 1993 (First Community Support Framework - IQCA) between 1994 and 1999 (Second Community Support Framework - IIQCA), between 2000 and 2006 (Third Community Support Framework - IIIQCA) and between 2007 and 2013 (National Strategic Reference Framework - QREN).

² *Europeanization* is understood as a process of construction, diffusion and institutionalization of formal and informal rules, procedures, policies, styles, shared beliefs and norms which are first defined and consolidated in the policy making of the UE and then incorporated in the domestic logics and discourse, identity, political structures and public policies of the member state. *Europeanization* is structured from policies, resources and transnational cooperation. In WATERHOUT B, MOURATO JM and BÖHME K. (2009) The Impact of Europeanisation on Planning Cultures. In: KNIELING J and OTHENGRAFEN Fe (eds) *Planning cultures in Europe: decoding cultural phenomena in urban and regional planning*. England: Ashgate Publishing Limited, 240-254.

³ The Municipal Masterplan (*Plano Director Municipal*), Urban Development Plan (*Plano de Urbanização*) and Detailed Local Plan (*Plano de Pormenor*) were introduced in the 80s, with the Decree-Law no. 208/82 of May 26th, with the subsequent amendment of 1990 that removed the link

between the implementation of the plan and the municipal budget, through Decree-Law no. 60/90 of March 2nd.

⁴ Law no. 48/98 of August 11th, amended by Law no. 54/2007, of August 31st.

⁵ Law no. 58/2007, of September 4th.

⁶ As present in no.26 of the Legal Framework for Territorial Management Instruments (*Regime Jurídico dos Instrumentos de Gestão Territorial*), defined in Decree-Law no.380/99 (with modifications introduced by Decree-Law no.310/2003, no.316/2007 and no.46/2009).

⁷ Law no.44/1991, of May 13th.

⁸ Resolution of the Ministers' Council no. 68/2002, of April 8th.

⁹ Decree-Law no. 222/98, amended by Law no. 98/99, of July 26th, Amendment Notice no. 19-D/98 and Decree-Law no. 182/2003, of August 16th.

¹⁰ The revision of PROTAML of 2010 was suspended due to the infeasibility of implementation of some infrastructures as the result from the current economic and financial crisis.

¹¹ According to *Indicadores de empresas por município em 2009*, in CARVALHO Ac. (2010) Anuário Estatístico da Região Lisboa 2010. Lisboa: INE. P.169.

¹² Integrated Plan of the Science and Technology Park (*Plano Integrado da Área do Parque de Ciência e Tecnologia*), diploma published in *Diário da República Série II*, in 16/01/96, nº13, 708- (67). 1996.

¹³ Notice 1098/2009, of November 10th.

Reading Conflicts and Congruencies in the Built Environment

Melissa Anna MURPHY, Norwegian University of Life Sciences, Norway

Cities today are full of conflicts and complexities. Globalization and densification trends in particular have led to the tight dwelling of a diversity of people, values, desires and demands upon the built environment. Planning attempts to plan for a level of general good, but this makes the expression of individual identities and ideals of social equity difficult (Fainstein, 2009). People in cities must live together and planners hold a great deal of power over the quality of spaces shared in this coexistence. As Heidegger (1971) has defined it, the act of dwelling defines who and how people are. When places are planned, built or upgraded, the people who experience them are affected. Some residents may win, being happy with outcomes, but others lose, potentially feeling displeased, out of place – or at worst – discriminated against and marginalized.

The physical quality of a city is thus dually affected by the past goals of urban planners, the current planning efforts of spatial management, and the ongoing actions of people's life. This effective link between planning and city fabric and city life can potentially illuminate past gaps and oversights that have occurred between plan and built translation. Through comparing the life in, and use of, places against planning intentions this paper argues that a basis for reflection over decision-making, planning input, execution can be informed.

While this paper does not attempt guidance through the morally loaded prioritizations that urbanism asks of planning, it will describe a tool for tracing the complex relations between built outcomes of planning and human actors. The aim is to illuminate an option for reflection that relates planning and management entities to built outcomes and user behaviors. This paper builds a theoretical argument for, proposes, and then tests a framework to contribute to practice of assessing built results of planning efforts. The proposed framework provides contextual, relational information that can be applied to understand the root of local urban conflicts and which groups or individuals are intentionally or unintentionally being prioritized in local planning.

1 Planning and managing the built environment

The built environment is composed of physical materials that dwellers experience and are informed by each day – most of which have been effected by past planning and current spatial management practices. In the built environment, management and planning authorities (hereafter referred to as Managers) can provide amenities, restrict particular uses, and control the maintenance and upkeep of the environment. These actions are largely exercised through the physical components, or materials, forming the environment.

The overall impression of one's environment has been strongly related to human wellbeing and identity in the field of Environmental Psychology. Marco Lalli (1992, p. 285) explains that “the environment attains its symbolic significance as a substrate of social, emotional and action related contents.” Understanding the built environment as a foundation for people is a basis from which planning can be judged. How solid of a social, emotional, and behavioral foundation is being provided in cities today? Is this foundation equal for every resident, or are some prioritized? Do management practices reinforce the intended substrates in place after projects are built? These questions of the built environment can be framed through the concept of place, as theory in this realm links people and their actions to their location and its environmental conditions.

To better understand the human implications of planning and management practice, this paper will first provide a survey over academic thought on the notion of place as it may connect people to their environment. Discussion then follows based on the impacts of the materials that compose an environment – how they physically and symbolically link users of place to planning and management authorities (referred to as ‘Managers’ henceforth). In the final sections, the paper will explain a material and behavior-based framework using a case study about local conflicts and congruencies found after an urban renewal project. The paper is concluded with potential guidelines to assess places. The aspiration of this paper is largely influenced by place-keeping thought which hopes to integrate a long term, holistic sustainability perspective into everyday places.

2 Defining place through its use

Similar to ‘environment, the term ‘place’ is difficult to delimit. ‘Place’ and its extent have long been contested through many nuanced definitions. This paper will focus on how place describes connections between human activity and qualities of the space in which it occurs. Geographer John Agnew (Agnew, 2011) has synthesized academic discussions on space and place into with three general definitions of place –‘Form’, ‘Meaning’, and ‘Representation.’ Geographical thought on place through history can generally be sorted through these definitions or some combination therefrom, resulting in varying degrees of the human in place discussions. The ‘Form’ definition of place is the simplest - a measurable location in space usually with recognizable characteristics (Setten, 2006). The next two reinforce human relationships to and within such a location - ‘Meaning’ follows thoughts on Relph’s (1976) ‘sense of place’ to include feelings, identities and roles of people at a particular location, while ‘Representation’ regards place as the “setting and scale for people’s daily actions and interactions” (Setten, 2006, p. 39).

Form, meaning and representation are paralleled in humanist Robert Sack’s definition of place from generic space. Sack (1992, p. 20) names the following three overlapping “forces” that form a relational framework which reemphasizes the meaning of the environment to human life:

- Nature – including the force of the physical aspects of place on people.
- Meaning – including attributed meaning of a place to its local people.
- Social Relations – aspects of a setting impacting how people interact.

By understanding the three together as “dynamically interdependent forces” (Sack, 1992, p. 20) – place can be interpreted and defined through human use, or activity, in space. Many academic fields build further upon the definition of place to produce theories that link nature/form, meaning, and social relations/representation to use. The chart in Figure 1 provides some examples of relevant theories from interdisciplinary literature.

While many fields focus only on physical or social phenomena, it is useful to see those which begin to near a realm of socio-materiality. Since contemporary planning thought is greatly influenced by sustainability goals and ecological perspectives, a prevalent understanding is that different systems are intertwined and all must be seen in relation to context. Here, socio-material realms become more applicable to a holistic perspective, defining importance of both human and physical characteristics. Socio-material thought departs from the positivist and modernist trends of separating and simplifying phenomena, moving towards the understanding that the social and material effect and produce each other (Law, 2008).

Place Trends in Interdisciplinary Theory and Design Practice

	Material <<<<<< Socio-material >>>>>>> Social	Implication of/to Use	
Form - Nature	<p><u>Architectural Design (esp. modernism)</u> Selection of materials and forms by an expert, form follows function</p> <p><u>Architectural Determinism</u> social actions based on materiality and physical setting (Hillier, Burdett, Peponis, & Penn, 1987), for example: <i>programming, place-making</i></p>	<p><u>Behavior Settings</u> social actions based on type of environment (Barker, 1968)</p>	Physical form and environment guides types of use
Meaning	<p><u>Material Semiotics</u> material selection and design to convey meaning and intent (Goss, 1988)</p> <p><u>Natural Place Identity</u> meaning of a place affected by normative value to physical attributes (Scannell & Gifford, 2010)</p> <p><u>Attachment/Sense of Place</u> importance of a place to local people (Relph, 1976)</p> <p><u>Urban Semiotics</u> materiality and detail of urban settings hold social meaning (Gottdiener & Lagopoulos, 1986)</p>		Use based on the fit between the material and social expectations; sense of what belongs and is identifiable.
Representation - setting for Social relations	<p><u>Urban Design (esp morphology)</u> Selection of materials in arrangements, forms, proportions to fit into a setting</p> <p><u>Aesthetics</u> material quality affects perception and ambience (Kaplan, 1988)</p>	<p><u>Dwelling</u> "to remain at peace within the free sphere that safeguards each thing in its nature." (Heidegger, 1971)</p>	Social uses affected by physical and perceived setting.

Figure 1 Implications for use of place from various theoretical backgrounds.

3 Use controls - and is controlled by - place

Delving into the socio-material, one concept that spans all three dimensions of place definition is that of territoriality. Architect Mathias Kärrholm’s (2007) writing describes territoriality as “power exercised over space”, or the controls of spatial use and behavior in place. While it is often assumed that formal planning and governing bodies hold control over the built environment, Kärrholm’s thought also considers informal controls in place. With this understanding, each person and group holds agency to control their environment, overlapping the responsibility of common residents and governance bodies.

“Territorial regulations affect our behavior and movements in urban space, both explicitly and in more obscure ways, and these types of regulation are often supported by material forms and designs.” (Kärrholm, 2007, p. 438)

Kärrholm’s description of controls in space include the implicit and explicit, formal and informal, variable and complex – attributing importance to spatial use. Types of use do not

always align with intentions for place and materials of place. This complexity highlights the need to observe the realities of space rather than assuming adherence to proscribed rules. Territoriality is a truly socio-material phenomenon, encompassing all of Sack's forces and explaining how place, its form, meaning and representation, are affected by the interplay between physical and human entities:

- The physical characteristics of a place ('Form' or 'Nature force') guide and deter different types and amounts of human activity. In example, a locked gate controls access to a park; smooth pavement encourages faster car and bicycle traffic.
- Use of place is based upon the fit between the material and the expectations of the social. User groups assign 'Meaning' to places based on the activities performed or observed in the space. In example, a cemetery achieves sanctity due to quiet contemplation that happens there; a dark, graffiti covered street invokes apprehension among the vulnerable.
- Social desires and amount of place use is affected by condition and perceptions of place. Social relations can also impact the local feelings of belonging that determine the regular users of a place. In example, broken benches detract staying, lessening spontaneous meetings between neighbors; successful playgrounds gather like-aged children and their parents.

Humans and place are irrevocably intertwined. As different people encounter a place, congruencies and conflicts in and across these realms tell a story of how social and physical phenomena impact each other in a given context. Traces left by use on a place's materials can illuminate such encounters. From the definition of place and territoriality, it is understood that the physical environment impacts our concept of it – that concept in return impacting the perception, hopes and desires of ourselves in a place.

4 Tracing use to planning, management and external forces

Place materials and use are susceptible to change over time. By comparing the conditions of a place at a given time to greater intentions for the place, elements and their responsible actors can be evaluated. Usage types and amounts can be assessed against the positive and negative effects on materials. Material conditions can be rated against intent and functionality over time. Supplementing and layering observation of material and use with place histories from local interviews, material effects can be traced to social actors. This will introduce a framework for this linkage.

Places can be defined but are never closed systems. While many uses in space are cyclical or self-reinforcing, outside forces can also be responsible for putting patterns into motion. Use and effects of use can be understood as products of larger and smaller trends affecting responsible parties – budget fluxes following governmental prioritizations in planning for example. The question then turns to what informs decisions and actions that impact a local built environment, and how suited are the physical outcomes of planning to those who inhabit it? This paper proposes that the observable quality of the materials of place and their conditions lend them to traceability back to greater social and administrative dynamics.

Despite an amount of controversy over the past decade, Actor Network Theory (ANT) has been deemed useful in mapping socio-material relationships in architecture and urban design (Fallan, 2008; Kärrholm, 2007). While ANT is not actually a theory (Latour, 2005), its use as an approach or meta-method may be fruitful in illuminating human-object relationships within and across physical borders. Understanding social and material components thus as interrelated parts of a network can move contemporary place ideology away from both social-

neglecting architectural determinism and material-neglecting social constructivism ideologies (Fallan, 2008; Latour, 2005).

An ANT approach encourages description through the mapping and tracing of actions between people and materials. Latour (2005) explains that ANT's aim is to "render social connections traceable by following the work done," explaining that entities within an Actor Network become important through the way they 'work' upon or affect adjacent ones. In the realm of planning and management, it seems prudent to expand this concept with that agency - understanding also the type of 'work' that different entities could potentially act upon others. The immediate environment can thus be understood as assemblages of materials linking to and from human actors. Through description of place elements as parts of a relational network, planning and spatial management practices can be translated into effects on life within the built environment. Influences on personal choices in place use and on management priorities can be dynamically balanced. Conflicts and congruencies between intent and actuality then pose a telling story - reflecting over practice.

In its simplest form the base network template appears as such:

User → Material ← Manager

Figure 2 Implications for use of place from various theoretical backgrounds.

The following two sections will describe a case which will be used in a later section to elaborate on this framework, its potentials and implications.

5 Conflicts and congruencies

A case of conflicts and congruencies after planning is described here to illustrate the framework's application in assessing an outcome of a planning initiative. The case information is extracted from two observation studies conducted in an Oslo neighborhood, Nedre Kampen. This area was upgraded under the initiative "Miljøbyen Gamle Oslo" ('Environment city' Old Oslo), which focused on bettering living conditions among the diverse, inner-city population. A series of projects were executed under the initiative, particularly in traffic calming between 1993-2000. Most built implementations have been in place for at least 10 years prior to the referenced studies.

Both studies providing the source material for the following case narrative were conducted with a phenomenological approach, attempting to understand the neighborhood as it is through the experience of a pedestrian resident. One study was fieldwork conducted for Master's thesis in 2010-2011 to describe tensions in the neighborhood's communal space (Murphy, 2010). Both photos and interviews from this study are drawn upon for reference. A 2013 (ongoing) pilot study for a doctoral research (Murphy, expected delivery in 2016) provides further observation data and photographs. The doctoral project's aim is to trace use and perception of place and understand motivation conflicts in spatial management.

Episodes from these two studies have been extracted here regarding one of the pedestrian plazas built under Miljøbyen Gamle Oslo. The episodes demonstrate conflicts and congruencies between the place's original intent and its actual life.

6 Case: Oslo's largest speed bump

"A good ANT account is a narrative or a description or a proposition where all the actors do something and don't just sit there. Instead of simply transporting effects

without transforming them, each of the points in the text may become a bifurcation, an event, or the origin of a new translation.” (Latour, 2005, p. 128)

This section will describe a case through various episodes of observation. Each episode is broken into actors (human and material entities) connected by actions (use and transformations). A diagram follows each narrative, denoting materials in CAPS, actions as vectors with explanations in parentheses, and human actors in lower cased text. The plaza was built as part of Miljøbyen Gamle Oslo’s traffic calming plan, described under a heading “From driving and parking to play and entertainment” (MiljøbyenReport, 2000, p. 192). The plan intended to reduce traffic and increase area safety and sociality for residents. This case project aimed to block what used to be a throughway with the addition of a pedestrian plaza.

Determination of ‘conflict’ or ‘congruency’ is associated with the plan intentions of Miljøbyen Gamle Oslo (Miljøbyen Report, 2000), practical place-making theory from Jan Gehl (2011), and place-keeping theory by Nicola Dempsey (2011). The term ‘conflict’ here implies that the result does not match the intention. For simplification purposes, entities are often collected into groups, limiting the network – which could be extended through detailed follow-up along each branch.



Figure 3 The pedestrian plaza residents refer to as Oslo’s largest speedbump seen from the north – Image from Google Maps Street View, image date June 2009, available at <http://goo.gl/maps/JGFW4>.

Episode 1 - In the snow, this pedestrian plaza is covered in tire tracks. Cars drive across it. The curb is high and continuous across the plaza’s edges – higher than most curbs at around 20 centimeters - but this is apparently not substantial enough to stop larger vehicles looking for a shortcut between Kolstadgata and Sigurds Gate. In the winter, snow drifts nearly eliminate the curb, providing an icy car ramp from street to plaza.

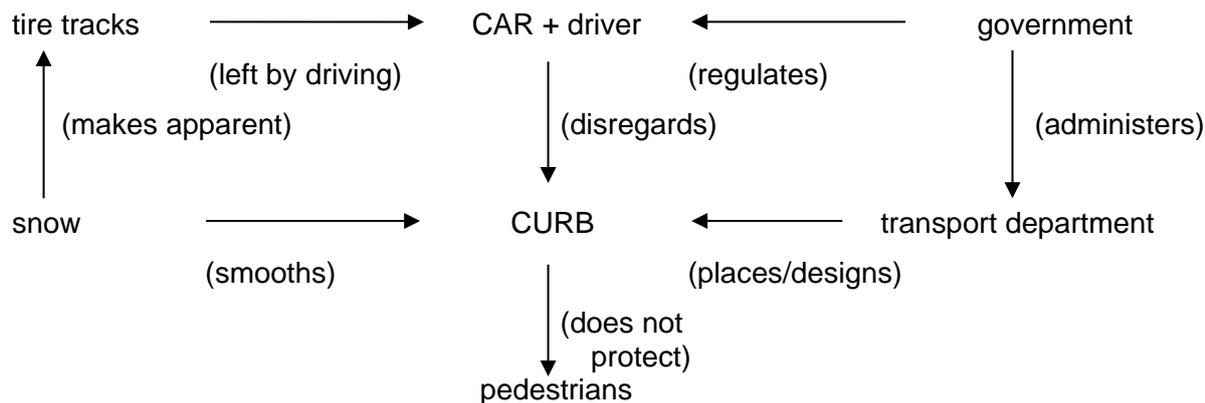


Figure 4 Conflict 1: Cars misuse materials.

Episode 2 - Benches and trees along the plaza are arranged neatly to one side, clearing a wide cobblestone plaza. The two adjacent streets are planned to direct cars around wide turns, away from the plaza. The materials of the plaza are nice, bright, and typically clean - a welcome, albeit more labor intensive change from the asphalt streets and asphalt sidewalks typical to Oslo. A bronze bust of a well-liked former mayor stands in the plaza, holding the potential to introduce a bit of civic pride and dignity to this otherwise marginalized neighborhood. The space is open enough to get full sunlight for large parts of the day. The design itself has many of the same elements that were successful just a few blocks away, deeper into the residential blocks - elements which the residents helped the planners choose under Miljøbyen Gamle Oslo's participation processes.

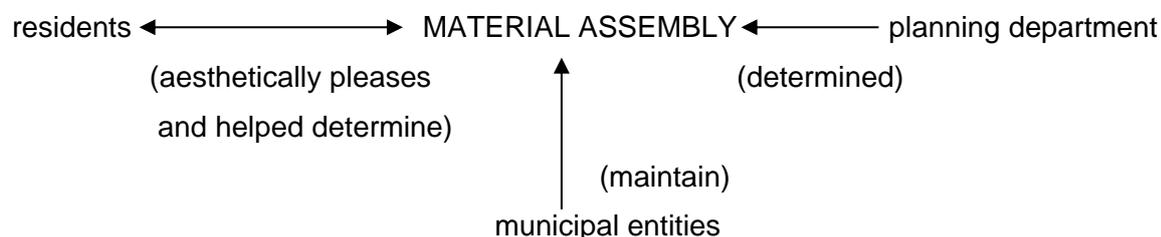


Figure 5 Congruency 1: The materials should be conducive to a safe, social place.

Episode 3 - There are few windows or doors facing the plaza and little reason to use the space. One adjacent building is a private residential cooperative, while two others hold centralized public housing leftover from the 1970s. The two benches of the plaza are often occupied in nice weather by local alcoholics who hide the beers in plastic bags from the nearby grocery store. On those days, their fellowship dominates the space, lessening the comfort of other potential 'stayers' in the space. A small bike rack is there, covered in graffiti and seldom used. This plaza is not a particular destination and the adjacent buildings all have their own bike parking close to entrances. The plaza has been the sight of at least one shooting and one stabbing in 2012.

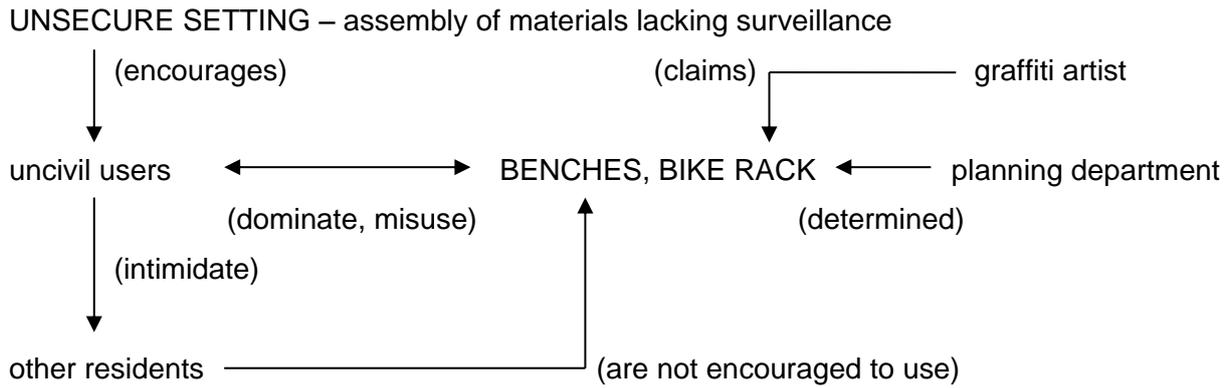


Figure 6 *Conflict 2: Domination of the material by uncivil groups*

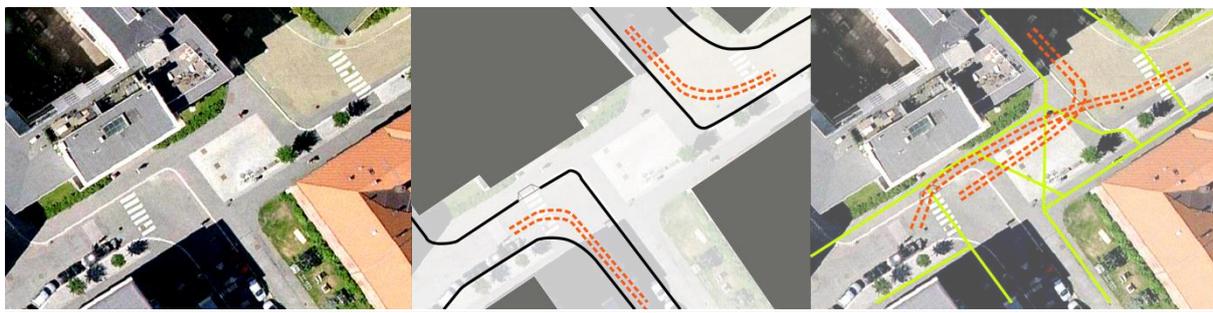


Figure 7 Aerial view of the plaza (left), drawing of traffic intention, traffic and pedestrian conflicts (right – car traffic in orange, pedestrian in yellow-green).

Episode 4 - From the car perspective, the road appears and perhaps should be continuous. Following either of the roads leads cars in a circuitous, non-intuitive route requiring many turns to cross the neighborhood. There are several businesses, particularly grocery stores, in the neighborhood which are stocked daily. Large trucks that carry goods have no problem jumping the curb. Smaller cars and trucks make use of a curb cut slightly south of the plaza – it becoming an awkward, lopsided ramp.

The plaza connects a dense residential district with bus stops, grocery stores, and subway plaza to the north. If pedestrians follow traffic rules and marked crossings, what appears as a straight sight line becomes a convoluted path. The tight line of trees and benches to the east provides obstacles for diagonal pedestrian crossing. The often occurring but unexpected presence of cars and trucks on the plaza further complicates being on the plaza.

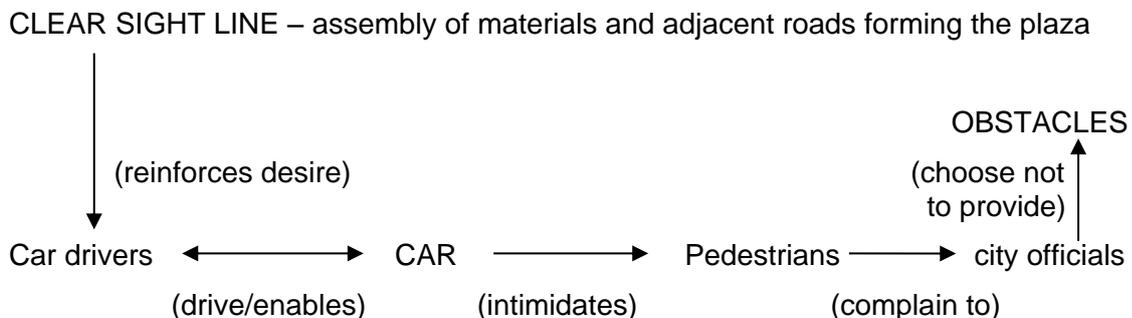


Figure 8 *Conflict 3: Sight lines are direct but the paths are not.*

Episode 5 - Children do play and parents do socialize in this neighborhood, but not in the plaza as intended. Just around the corner to Kolstadgata, a first floor apartment often has a window open to a kitchen. Children play on the small sidewalk outside, checking in with the mother through the window. Sometimes neighbors also stop to chat there despite the narrowness of the sidewalk. This place is more trafficked by pedestrians, cars heed the curb, and drive slowly as they approach the bend in the road. The street is quieter, calmer, and safer overall since the nearby traffic calming implementations.

CALM STREET – assembled ambience from reduced, slow moving traffic



Figure 9 Congruency 2: Nearby areas function as safe social arenas

7 Lessons of the framework

This summary will relate these episodes to the base framework illustrated earlier (Figure 2). The following 7 points are keyed with numbers into an elaborated framework in Figure 9.

1. Managers are those responsible for materials, their existence, and the upkeep of their condition. (Episodes 1-4)
2. Users can also be responsible for materials and changing the material conditions. (Episodes 1, 3, 5)
3. Use of place can guide the perceptions of and inform use by other people. (Episodes 4, 5)
4. The physical presence of material (singular or as an assembly) can guide, allow, and discourage uses. (Episodes 1-3)
5. Material conditions determine planning and management needs and workloads. (Episodes 2-4)
6. Individual motivations can make later use and misuse difficult to predict. (Episodes 1, 3, 5)
7. Circumstances external to a project may limit the resources for management.

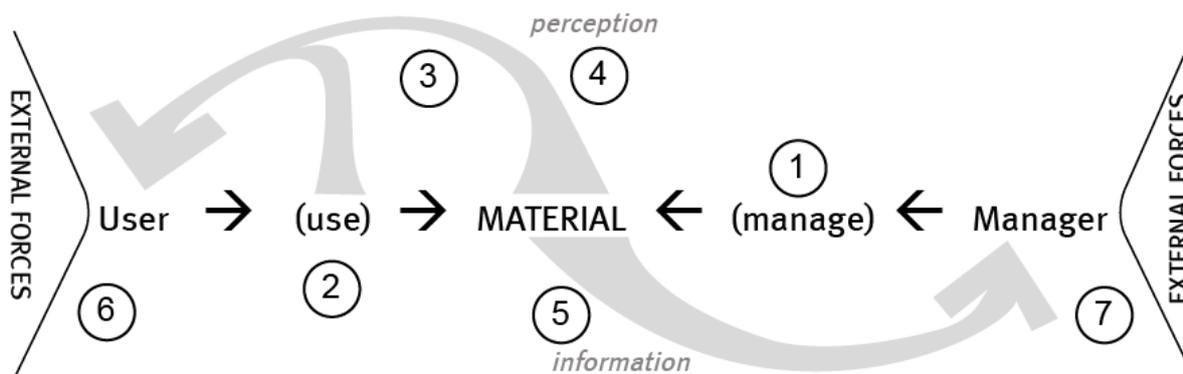


Figure 10 An elaborated framework of the material in the built environment

Indirectly, following these steps through the framework, further points can be concluded. Inconsistencies in both manager and user realms often appear in the built environment. The

suitability of planning and management decisions impact perceptions and inform use (Episodes 1-5). Managers often have the agency to counteract detrimental use and negative perceptions (Episodes 1, 3, 4).

8 Lessons from the material

Materials and their condition can be dually understood as products of use and as products of governance; the two actions counteract each other in space. Signs of material misuse often relates to local social dynamics, while the toleration of misuse and unchecked use of place may comment upon ignorance, disengagement, or inability of a place's managers. The following general lessons are gleaned from this study which can become important reminders for planning and management practitioners in assessing their own place work.

- The lack of use in place can be as significant as the presence of use.
- Use does not always follow intention.
- Seasonal and temporal conditions change material and use.
- Agency of different actors can inform projections and remediation measures
- Materials can enable civil or uncivil user groups
- Management resources and mechanisms may be limited after construction
- Inflexible existing conditions may impact use more than new implementations
- Perceptions of use are as important as physical condition in determining use, but:
 - Pleasant conditions do not always lead to desired behaviors
 - Desired behaviors can occur as secondary effects of planning projects

Many of these lessons are context dependent, but can be considered in new place planning projects.

9 Implications on place

Summarizing the framework's lessons in terms of place definition and place theory can help to explain the role of materials in the built environment and its life. The life of a place, divided into the entity groups of User, Material, and Manager can be used to describe and analyze the effectiveness of decisions in the built environment over time. A goal for such potential can be found in place-keeping thought, encompassing both planning and maintenance of place with the aspiration "to create a high quality, sustainable space which is valued by users who want to visit it again and again" (Dempsey & Burton, 2011).

Reflection over this study and framework concludes with a suggestion for further empirical work to test its extents and limitations. It could also be analyzed against different user-manager relationships to understand how action, information and perceptions change.

The framework together with the place definition implicates a base for judging place-keeping effectiveness. This study proposes the following indicators as a starting point for such:

- Form- If materials and their arrangement in place are sustained in a non-detrimental manner despite continued use, then place-keeping is effective.
- Meaning- If the actual and intended uses of space are congruent, then the meaning is sustained over time. Place-keeping then can be effective as long as the actual management of place follows the anticipated management needs of place.
- Representation- If materials and their arrangement are congruent with the actual use of the place and management can sustain the balance of wear for continued use, place-keeping is effective.

Further study is needed to test and potentially elaborate upon these points, but conceptually holes and dissonances found in place could significantly inform practice. Possible patches to the physical and managerial aspects of place can be illuminated alongside cost analyses to determine the overall benefits of better suiting the built environment to the life that inhabits it. While social trends, personal expectations and desires may not be controllable by a place

project, accounting for effects of the place use will strengthen the future place plans and sustainability.

10 Conclusions

Planners cannot control the life that their plans inspire, but they can learn from it. The uncontrollable aspects of human populations and behavior will always impact place. This quality of the urban demonstrates the usefulness of planners and spatial managers to reflect over the outputs of their practice. The type of reflection framed in this paper is one seldom found after projects are built. Reports after plan implementations such as Miljøbyen Gamle Oslo often show before and after-construction pictures, but spaces are not typically studied over a long term or critically documented as everyday life and time has makes its marks.

The Miljøbyen Gamle Oslo plan initiative has been critically evaluated using demographics data from the census. The city now has published and realizes that most living condition increases since plan implementation are actually attributable to new populations moving in (Miljøbyen Report, 2000). Such results are important and valuable information to the municipality and planning professionals, but they offer little insight over how to make meaningful improvements in the daily lives of the residents who are already there, in place. This urban renewal effort turned into a classic case of gentrification, which may have been expected given the aesthetic focus of many of its projects. Observing materials and life in the spaces now could inform simple solutions to better local places – some central benches to block traffic in the described case for instance - but funding for the project and its spaces ended over a decade ago.

Too often, budget and resources for planning and local implementations often stop short after a project's end. This tradition in practice does little to support planners' ability for reflection, evaluation, and learning after project completion. Reflection over the products of practice could contribute to holistic assessments of works past to inform current planning and management needs. This framework demonstrates the capacity to be far more detailed and suited to the context of place than a before and after surveys. Observation studies are demanding in time and human resources, but offer great potential for guiding place betterment and increasing maintenance efficiency. Collaborative, cost-sharing efforts could be encouraged across different public and private sectors to share burdens and strengthen the sharing of local information.

One of the key learning points in this type of reflection is the difference between how a planned space or project may seem on a drawing and how it may be perceived and used in everyday life. Planners and spatial managers today must realize that their jobs cannot be accomplished sitting behind a desk – they need the invaluable local knowledge only acquirable in the field. Professionals without the resources to open intense evaluations over planning projects past, could work such strategy into the early documentation phases of planning projects. Implementing material observation and learning early could provide plans a basis relevant to a locale's existing life. Such a strategy could effectively pinpoint and encourage positive local behaviors, while learning the sources of detrimental ones – grounding future interventions in what already exists.

References:

- Agnew, J. (2011). Space and place. *The SAGE Handbook of Geographical Knowledge*, 316.
- Barker, R. G. (1968). *Ecological psychology: Concepts and methods for studying the environment of human behavior*. Stanford University Press.
- Dempsey, N., & Burton, M. (2011). Defining place-keeping: The long-term management of public spaces. *Urban Forestry & Urban Greening*.

- Fainstein, S. (2009). Spatial justice and planning. *Spatial Justice n, 1*.
- Fallan, K. (2008). Architecture in action: Traveling with actor-network theory in the land of architectural research.
- Gehl, J. (2011). *Life between buildings: using public space*: Island Press.
- Goss, J. (1988). THE BUILT ENVIRONMENT AND SOCIAL THEORY: TOWARDS AN ARCHITECTURAL GEOGRAPHY*. *The Professional Geographer, 40*(4), 392-403.
- Gottdiener, M., & Lagopoulos, A. P. (1986). *The city and the sign: An introduction to urban semiotics*: Columbia University Press New York.
- Heidegger, M. (1971). [Building dwelling thinking].
- Hillier, B., Burdett, R., Peponis, J., & Penn, A. (1987). Creating life: or, does architecture determine anything? *Architecture et Comportement/Architecture and Behaviour, 3*(3), 233-250.
- Kaplan, S. (1988). Perception and landscape: conceptions and misconceptions. *Environmental aesthetics: Theory, research, and application, 45-55*.
- Kärholm, M. (2007). The Materiality of Territorial Production A Conceptual Discussion of Territoriality, Materiality, and the Everyday Life of Public Space. *Space and Culture, 10*(4), 437-453.
- Lalli, M. (1992). Urban-related identity: Theory, measurement, and empirical findings. *Journal of Environmental Psychology, 12*(4), 285-303.
- Latour, B. (2005). *Reassembling the social : an introduction to actor-network-theory*. Oxford ; New York: Oxford University Press.
- Law, J. (2008). Actor network theory and material semiotics. *The new Blackwell companion to social theory, 141-158*.
- Murphy, M. A. (2010). *Boundaries to Socially and Environmentally Equitable Communal Spaces*. (Master of Science in Urban Ecological Planning Unpublished Thesis), Norwegian University for Science and Technology, Trondheim, Norway. Retrieved from <http://www.scribd.com/doc/56154099/Boundaries-to-Socially-and-Environmentally-Equitable-Communal-Spaces>
- Relph, E. (1976). *Place and placelessness* (Vol. 67): Pion London.
- Report, M. (2000). Hovedrapport Miljøbyen Gamle Oslo (Main Report: Environment-city Old Oslo). Huset Kommunikasjon & Design AS: Norwegian Environmental Protection Department.
- Sack, R. D. (1992). *Place, modernity, and the consumer's world: A relational framework for geographical analysis*: Johns Hopkins University Press Baltimore, MD.
- Scannell, L., & Gifford, R. (2010). The relations between natural and civic place attachment and pro-environmental behavior. *Journal of Environmental Psychology, 30*(3), 289-297.
- Setten, G. (2006). Fusion or exclusion? Reflections on conceptual practices of landscape and place in human geography. *Norsk Geografisk Tidsskrift-Norwegian Journal of Geography, 60*(01), 32-45.

Siting Green Infrastructure: Synthetical Solutions for Leading the Oasis City's Sustainable Development In Wuyi New Town

Jie Ren, School of Architecture, Tsinghua University, China

1. Introduction

As a popular framework for smart growth and conservation, urban green infrastructure aims at constructing a natural support system in urbanized areas through protecting nature resources and considering social, economic and cultural elements. The formation and stability of this green framework could not only guarantee the security and stability of ecological environments, but also offer a basic ecological security pattern and development control framework and finally provide a foundation for city's future resilient development.

Owing to the particular conditions of oasis cities, the stability and security of ecological environment seem to be quite more crucial especially when dealing with urban sustainable development. This article showcases how Wuyi New Town constructed its sustainable developing strategy by the strategic method of green infrastructure.

2. Background

Wuyi new town, covering 11.2sq km, is located in the north foot of Tianshan Mountain in the western arid land of China, about 26km from west of downtown Urumqi (Figure 1, Figure 2). In order to meet the need of the ecological and sustainable development, protect the regional ecological safety, and guide urban future rational special expansion, the idea of green infrastructure was presented at the beginning.

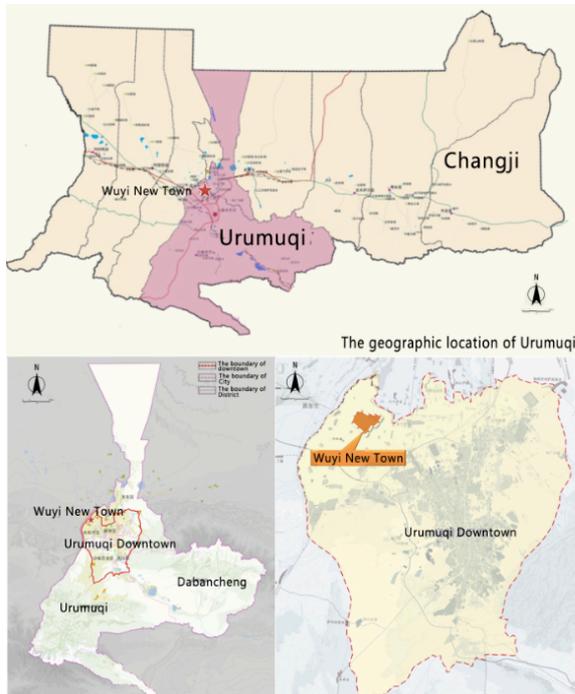


Figure 1 Location of research site



Figure 2 Research areas

2.1 The formation of the idea of green infrastructure

2.1.1 The constrain of ecological environment: important oasis areas in the north foot of Tianshan Mountain

The Tianshan Mountain lies in the north of Xinjiang and it is the largest mountain range located in Central Asia. Owing to the difference of topographic slope and the distribution of rainfall, the north foot of Tianshan Mountain forms a special MODS (mountain-oasis-desert system) ecological pattern, that extends roughly north-south and distributes layered (Figure 3). Among those three systems, the oasis regions in the north foot of Tianshan Mountain are the key factors of maintaining the ecological safety of Tianshan Mountain, and Wuyi new town is just in the core region of the oasis.

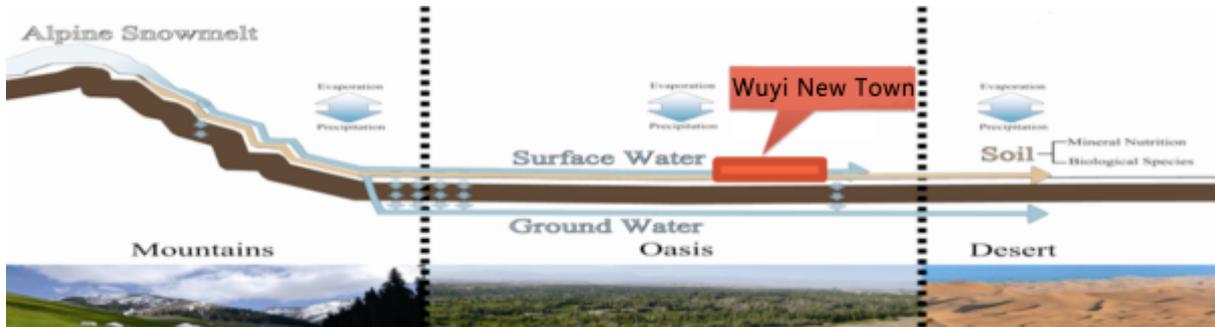


Figure 3 MODS system: Mountain-Oasis-Desert

Recent years, because of entering into the phase of rapid urbanization, the amount of urban construction lands of Wuyi new town have experienced a significant increase. The urban layout pattern has moved from “punctate distributed layout” which is single axis-based on main traffic lines, towards “multi-point and multi-axes” network layout” gradually, while interfered many ecological elements’ north-south circulation seriously and leading to a sharp increase of the fragment of regional ecological landscape. Meanwhile, owing to the continued expansion of large scale land reclamation and unreasonable farming practices, the resource of surface water and ground water have been overexploited, and caused more serious phenomenon of funnel-shaped ground water.

Under the background of increasing changes of ecological pattern in north foot of Tianshan Mountain, it is important and crucial to pay attention to the building of ecological environment and the construction of rational urban green space in order not only to curb the oasis degradation, prevent the desert southward and maintain the stability of regional ecological patterns, but also promote the sustainable expansion of Wuyi new town’s future urban space.

2.1.2 The need of urban development: the key location of regional economic development

Wuyi new town located in the northwest of Urumqi downtown, the east of Changji downtown, the north of Diwobao International Airport and the middle of Urumqi-Changji economic integration, and it owns better advantages of location and resources (Figure 4). However, for now, because of the constrains from economic structure and political system, there existed some issues which could not been ignored maybe hinder the future urban development. Meanwhile, seen from the point of the development of Bingtuan Area and the update of regional future development, it further reinforced the sustainability of development path and the important role of city’s function.

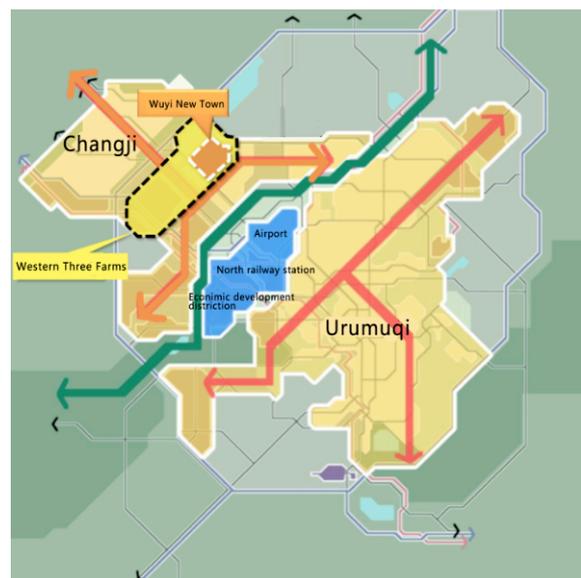


Figure 4 Regional future development layout

2.2 The constrains and challenges of green infrastructure planning

2.2.1 Serious degradation of vegetation and relative shortage of water resources

Wuyi new town is located in semi-arid continental climate regions with an average annual evaporation of 1787mm, which is 9.77 times than the rainfall, and the problem of water scarcity is very prominent. Meanwhile, as some other oasis cities, Wuyi new town is also exposed to a multitude of conundrums on natural environment deterioration, such as dry weather, dust storm, inadequate green areas, soil depletion, vegetation degradation, etc. At the same time, owing to the relatively limited water environmental capacity, Also, because the whole area's water environmental capacity is relatively limited, the phenomenon of sandy soil and the soil with low organic matter is also going to be troubleshooting. So, the reasonable construction of region's green space is particularly important.

2.2.2 Sandstorm impact on the town significantly

Wuyi new town lied in the "Qitai-Shihezi hot wind zone" with frequent sand blowing weather which not only reduced the air cleanliness, but also affected the local crop production and the life of local residents seriously. Since the dust weather, the process of Wuyi new town's urbanization will experience an exchange from the pattern of "farm-protective forest network" to the pattern of "town-green space". Therefore, rely on the current situation of vegetation, how to enhance the protective capability of green space from the level of spatial arrangement and vegetation choice is also a problem this green infrastructure planning will face.

2.2.3 The construction of urban green land needs to be improved

The construction of Wuyi new town's green land is still in its infancy. There is only one current agricultural sightseeing garden for urban residents' daily recreation and the other main form of green land is protective green land, including current road protective forest and farmland shelter forest network. In addition, the types of vegetation are still in limited and the form of greening is relatively simple, that make the size and quality of green space and the future need of urban development both have large gaps.

2.2.4 The promotion of agricultural landscape faces challenge

Agriculture has been not only a basic industry of Bingtuan but also the regions of north foot of Tianshan Mountain. After a long period of development, agriculture has been a typical type of landscape and important landscape resources that could embody and strengthen the geographical characteristics. However, the agriculture's character of large consumption of water seems to contradict the ecological safety of those oasis regions seriously.

Hence, during the process of changing from traditional agriculture to modern agriculture, It also seems to be an challenge for Wuyi new town to extend the characteristics of agricultural landscape properly, enhance the overall efficiency of agriculture and reshape the regional landscape.

2.3 The core content of green infrastructure planning

On the one hand, green infrastructure emphasizes an interconnected network of green open spaces; on the other hand, it is more a method of land preservation, the green space network it formed could not only offer a framework for urban future development in foresight, but also present a path to guide both urban future development and the greening of other municipal infrastructure systems.

Therefore, during the research of green infrastructure of Wuyi new town, the contents from above two aspects have been documented into three facts: the construction of green space system, the setting of urban development path and the guidance of municipal infrastructure.

In addition, because of the convenient regional traffic conditions and abundant resource superiorities, in the future, Wuyi new town will also undertake a pivotal role in regional development. The ecology, security and sustainability of oasis city are emphasized during the planning progress of Wuyi new town from government decision-making, innovative

planning conceptions, and technological means to practical approaches. Basing on the core idea of maintaining and enhancing the regional ecological environment mostly, the conception of green infrastructure was presented to guide Wuyi new town's sustainable development. As a city's natural service system, Wuyi new town's green infrastructure aims at exploring a planning and design operation mechanism, and forming the "Wuyi Model" that features rational and efficient oasis city development.

3. Green infrastructure planning in Wuyi new town

3.1 Basic concept: using green infrastructure to guide urban development

3.1.1 Green infrastructure first

At the beginning of the design, the concept of treating natural environment and green space as one part of urban infrastructure to be constructed first was determined. It emphasized a comprehensive analysis of current land resources and the synthesis of society, economy, ecology and some other factors. It claims to delimit the boundary of preserved land first and finish the planning formulation before new land allocation. Through protecting the rationality and integrity of green land system, it could guarantee the continuity of the natural and biological processes, while reserving sufficient development space and providing the possibility of high efficient land preservation and development, and enhancing land's natural service capability and urban resilience to natural disasters.

3.1.2 Not only emphasis on green indicator, but also eco-efficiency

Although owned favorable regional advantages and resource endowment, Wuyi new town experienced a relatively fragile ecological natural environment because of the affection of oasis climate. Therefore, it is crucial to pay attention to the capability of natural service, enhance the attention to green space and strengthen natural spaces' important role in urban sustainable development. Basing on the emphasis of protecting green indicator, this planning paid more attention to the interconnection and ecological efficiency of green land. Through the construction of perfect network of green space systems, those green land space not only could be seen, but also could be used and enhanced the ecological efficiency of green land fundamentally.

3.1.3 Full recognition of the economic contribution value of green spaces

On the basis of full recognition and emphasis of the comprehensive benefits that urban green land could produce, building a sound green infrastructure network and improving ecological environment dominated by efficient management of green land could make the environmental advantages convert into economic advantages, which will led Wuyi new town's future economic development. At the same time, urban environment with high quality will also help enhance the city's image and visibility, then further promote the city's tangible and intangible asset value.

3.1.4 The combination of passive preservation and positive development

The planning emphasized the combination of passive preservation and positive development, that is to form a network which addressed both the protection of green space and urban development, and this protective overall green network could draw a boundary for urban future development and require future development activities carried out within this boundary. Yet, this mode is not to place land preservation in opposition to land development, it stressed a transformation from a simple only protection of green space to a much systematic and guiding overall urban development network through the consideration of future development, urban expansion and some other development planning.

3.2 Multi-layered research perspectives

In the case of Wuyi new town, in order to improve the veracity and comprehensiveness of the planning, the research prospect of green infrastructure was expanded to a larger medium-level of Wuyi Farm and a macro-level of Western Three Farms (Figure 5), and those

three different spatial levels corresponded to the microscopic specific design methods, the formation of medium planning countermeasures and the construction of macroscopic strategic guidelines, respectively.

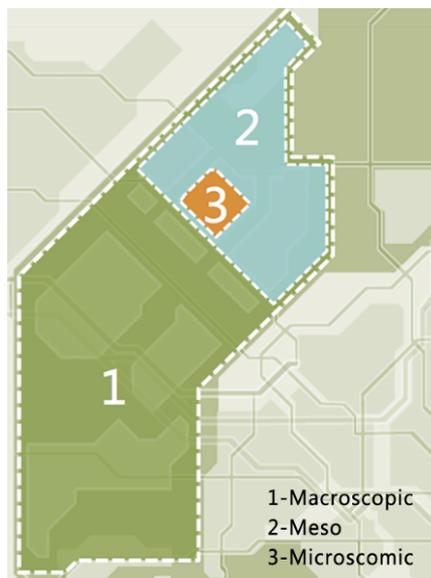


Figure 5 The mode of planning levels

Sheet 1 The relationship between three research levels

Research Level	1. Macroscopic	2.Middle	3.Microsmic
Research Area	Western Three Farms (including Wuyi Farm, Sanping Farm and Toutunhe Farm)	Wuyi Farm	Wuyi New Town
Land Area (Km)	181.2	61.2	11.3
Planning Content	The construction of macro strategic guidance	The formation of medium planning countermeasures	The realization of micro design measures
The Key Point of Planning	<ol style="list-style-type: none"> Proposed the guiding ideology of green infrastructure Constructed strategic structure of regional green infrastructure Presented guiding overall strategy (including green space and infrastructure) 	<ol style="list-style-type: none"> The planning countermeasures of green space The planning countermeasures of infrastructure 	<ol style="list-style-type: none"> The design measures of green space The design measures of infrastructure

3.3 Strengthen the construction of ecological green space

3.3.1 The ecological strategy of green space in macro Western Three Farms

The macro-level research determined the idea of using green infrastructure to guide urban development and five basic principles about valuing the ecological benefits, advocating green infrastructure advance, combining the passive protection and positive development, realizing the economic value of green space, and compromising the urban public space and green space. Under this planning conception and principle, the macroscopic green infrastructure system was constructed through collecting and analyzing the oasis's special natural conditions and the other social, economic and cultural elements, And this system offered a strategic framework for the whole Western Three Farms' spatial development and land layout. Meanwhile, the overall strategy about green space, urban development and urban infrastructure were defined in the meantime.

(1) The functional diversification of green land

According to western three farms' current developing situation and its development goals in 12th Five-Year Plan, at first, the project made three east-west agricultural landscape belts based on produce function, which are mainly composed of forestry, vegetables and fruit, respectively. Those three landscape belts were urban delicate agriculture oriented which featured in ponds leisure, flowers economy and farmhouse experience, and aimed at forming a big scale farm landscape with both productive and entertainment. Second, on the basis of meeting with the need of bit lines and safety requirements of municipal pipeline corridors, the project separated those regions by five green land corridors. Those corridors were mainly used of country parks with strong public participation and public activities. The design proposed for a subject of plant cultivation and used the large-scale farming of sunflowers, lavenders, canola flowers and some other landscape plants to extent the beauty of agricultural landscape while kept the balance of the flexibility of space usage and the low maintenance costs. Besides, as the balance space of urban construction and nature protection, those five green country parks would also accomplish a great deal in the safety of storm water for the function of storing water (Figure 6).

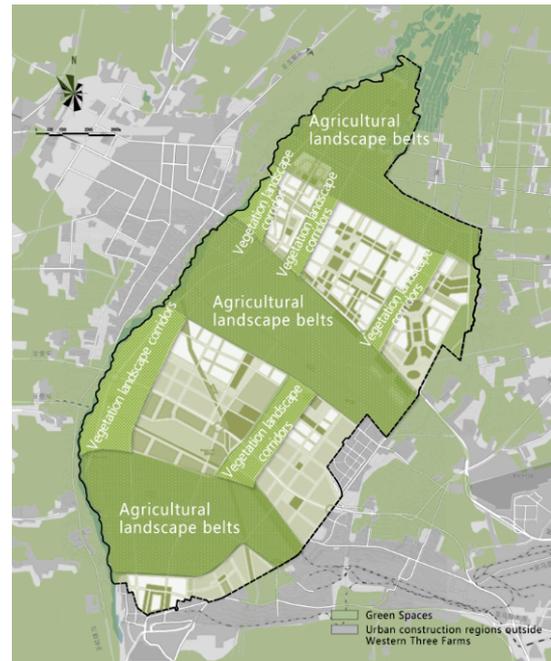


Figure 6 The strategic framework of green infrastructure in Western Three Farms

(2) The features of landscape

The project adjusted the original planting mode of Western Three Farms, combined the original topography and morphology of Western Three Farms, and then used the landscape effects of special flowers and shrub plants to create a flat open landscape.

3.3.2 The planning countermeasures of green space in medium Wuyi Farm

The medium-level confirmed the specific countermeasures, like specific location, control range and main function of green infrastructure system of Wiyi Farm.

(1) The refinement of green spatial structure

This level emphasized its connection with macro level, and it added a next level of green belt to perfect the overall green spatial structure. Through the formation of a number of park zones, it connected all the parks, ecological corridors, green belts and some other large green space, kept the continuity of the green land in Wuyi Farm, boosted ecological factors penetrating to urban regions step by step, and finally improved the natural environment and micro climate.

(2) Keep the ecology and versatility of green land

Firstly, as urban agricultural ecological corridors, there was a need of promoting the transformation of agriculture structure through strengthening the construction of agricultural water-saving facilities and building high efficient ecological agriculture systems, marked by

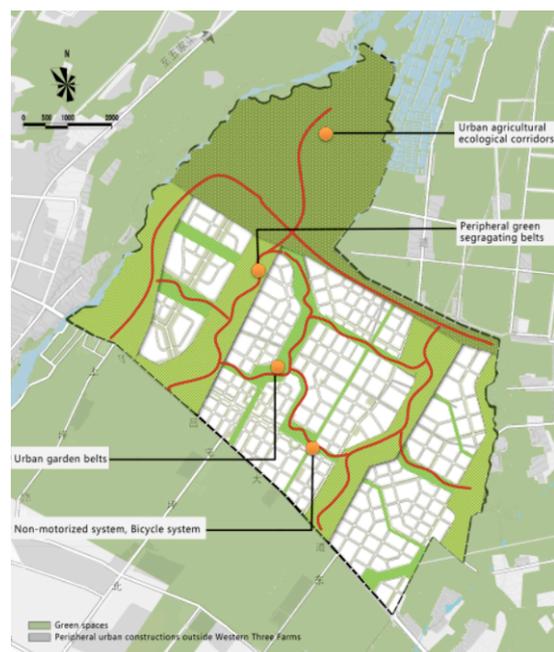


Figure 7 The spatial layout of green infrastructure in Wuyi Farm

ecological green agriculture, tourism agriculture, modern high-tech agriculture and so on. Secondly, for the peripheral green belts, it should strengthen the green construction of current villages, roads and some other constructions, control the construction strength, move away the construction projects which were heavy impact on environment gradually and do ecological restoration. Meanwhile, the project promoted an agricultural forest mode of "big grids, wide belts" in green belts' upwind regions to build a source of oxygen and a protection from sands. Finally, all the urban park belts should pay much attention to ecology first and highlight the ecological function of water-saving and protection against wind during the choose of plants and planting methods. In addition, based on those urban park belts, it constructed more connective pedestrian systems and exercise biking systems.

3.3.3 The design measures of green space in micro Wuyi New Town

In the micro-level of Wuyi new town, green infrastructure system became not only green space system but also a basic functional carrier which could coordinate multiple urban infrastructure, such as open space system, transportation system, water supply and drainage system, under the principle of "green".

(1) Adaptive vegetation choice

Because the special climatic conditions in Urumqi, it was crucial to choose proper vegetation to adapt such middle temperature and drought environment.

The regions around the east, south and west of Wuyi new town were both country green ways and the fields of those regions were relatively fertile and owned a large proportion of arable land. In the future, the productive ways would be dominated by agroforestry which were mainly protection forestry of "narrow belts and small grids" with part small economic trees and timber forest. By doing so, it maintained the safety of regional ecological system. The green ways inside Wuyi new town were all urban green ways and road greening were important part of urban green ways, that they own significant role of decreasing dust, replenishing groundwater, improving outdoors' high temperature in summer, purifying the appliance of city and some other aspects. In the tree species selection, elm, maple and conifer were the main kind owing to their long-life, less flower drop and better effect in the development of desert and temporary development.

(2) Strengthen the ecology of green land

In the design of green space, proper allocation of different vegetation was significant measures for improving the ecological efficiency of green land. Firstly, the design used large areas of large arbors and shrubs in green ways inside city. On the one hand, by doing so, intensive big crested species could enhance light shielding effect and reduce urban green ways' wind speed (green ways could reduce wind speed between 35% and 75% [1]); on the other hand, transpiration could enhance the air humidity of around regions (The air humidity around green ways are about 10%-20% higher than that around urban district. The air humidity of big parks could be about 27% higher [2]), form pressure differences between green ways and urban constructions, and then improve the circulation of air humidity and ameliorate air condition.

For arbors and shrubs, the lawn has a better performance of dust extraction. The complexity of the combination of above three will directly affect ecological benefits of dust extraction, wind-resistant and noise canceling, and the more complicated combination, the higher ecological efficiency. When the width of the combination of arbors, shrubs and lawns achieved 3 to 70 meters, the noise would be reduced between 3.7 to 7.5DB(A). Therefore, it was important to pay attention to the structural equilibrium of those three vegetation in Wuyi new town's plant arrangement.

(3) The effective integration of urban public space

The goal of green infrastructure system in Wuyi new town was not only connecting constructions and natural environment, but also offering urban residents more comfortable, convenient and efficient urban public service through giving ecological green land more active roles. Hence, this design corrected the problem of considering and planning green land systems and urban public space systems separately, and it considered those two

aspects together to set proper comprehensive parks, community parks, topic parks and green areas nearby street to meet the need of urban function.

The combination of city green ways, parks, squares and green land formed Wuyi new town's public open space system. It not only offered ecological securities for Wuyi new town, but also supplied the possibility of peoples' high usage of green land through injecting many kinds of urban functions in green land.

(4) The reasonable convergence of urban public service facilities

The urban green public service systems were mainly composed of Bingtuan-level facilities, New town-level facilities and residential facilities. Based on the formation of green infrastructure network, this planning ensured residents can have green space within 500 meters. Meanwhile, it distributed urban public service facilities along main roads and important green corridors to improve the convenience of peoples' daily usage of public service facilities and formed urban green public service facilities network systems.

3.4 Construct a low-impact water environment

Wuyi new town's distribution of vegetation has closing relationship with the water level and water quality of regional underground water. Hence, under limited water resource, it was significant to guide rainwater, enhance the water storage ability of regional soil and improve vegetation's ability to survive.

3.4.1 The building and control of urban rainwater network

(1) Rainwater network

There were no rain drainage facilities in Wuyi new town and the rainwater usually evaporated or flowed to low lands along roads. This design emphasized the artificial guidance of rainwater and claimed to use green land's ability of water content and water storage to amplify rainwater's infiltration time and infiltration areas. Meanwhile, under the basic principle of respecting site's original hydrological direction, this design complied with natural original context and formed drainage direction of main north-south and accessory east-west. It combined the artificial water channels and natural water channels, and enhanced their benefits.

(2) Rainwater control

Forest infiltration and drainage systems: combined with the construction of road protection belts, this planning formed artificial channels to collect rainwater from roads and residential areas by two levels. At the same time, all the forest infiltration and drainage systems were made of natural stones to enhance their ability of infiltration.

The control of rainwater in residential areas: set sunken green land to centralize rainwater and form rain gardens that could infiltrate water and decrease the concentration of initial rainwater's pollutant by the ways of plant purification.

The control of rainwater in public space: built water collection and water infiltration facilities in densely public buildings. In addition, used porous pavement on ground parking lots, sidewalks and new roads to increase rainwater's infiltration rate and reduce runoff coefficient. The treatment of excessive rainwater: firstly, used forest infiltration and drainage systems to absorb parts of excessive rainwater. Then, through organized control and whole-process monitor of excessive rainwater's surface runoff, when faced with extreme rainfall, the traffic measures of restricting access roads will ensure city's water safety.

(3) Rich green land's function

The project used green land's interior function, like grass swale system, detention system and low-lying permeable landscape, to change traditional mode of drainage rainwater and chose more natural ways to manage rainwater.

Firstly, the pebble grass swale systems were used to collect and purify rainwater. Then, based on the network of green ways, grass swale systems were made to form region's ecological basis. Finally, lots of "green pots" were constructed to replace the structure of "single line" through comprehensive detention (small wetlands). In most part of site, it chose traditional gravel basin-shaped depression. In the other urban central park and ecological demonstration garden, it used wetland detention and shallow swamp detention owing to

their higher demand of water and the ecological demonstration effect. Besides, the project also used large amount of low-lying permeable landscape to reduce surface runoff and replenish urban groundwater source.

(2) Efficient urban sewerage system

Current urban sewerage was discharged through original open trench and closed canal and there was no perfect drainage facilities that caused serious pollutant for downstream water and its surrounding soil. According the characteristics of climate and terrain conditions in Wuyi new town, the design emphasized the combination of current terrain and the usage of natural line, and used the method of gravity flow. By doing so, it saved the length of pipes with large diameter and constructed a concise layout of drainage pipes.

(3) Strengthen the reuse of recycle water

According to the types of land use, it determined the main application of recycle water to be the supply of landscape water (water for amusement in urban park) and urban common use water (irrigated water, washing closets of some public buildings, cleaning roads and washing cars). On the sequence of usage, it gave priority to irrigated water, then the supply of landscape water, finally the washing closets.

4. Conclusion: Taking green infrastructure as synthetic solutions for leading the oasis cities' sustainable development

As on kind of complicated work, the theoretical research of green infrastructure integrated landscape ecology, conservation biology, regional planning, geography and many other subjects. In addition, it also followed some basic principles, such as connectivity-emphasized, preservation parallel with development, planning and preservation first, important public investment and some others.

The ecology, security and sustainability of oasis city are emphasized during the planning progress of Wuyi new town from government decision-making, innovative planning conceptions, and technological means to practical approaches. Basing on the core idea of maintaining and enhancing the regional ecological environment mostly, the conception of green infrastructure was presented to guide Wuyi new town's sustainable development. As a city's natural service system, Wuyi new town's green infrastructure aims at exploring a planning and design operation mechanism, and forming the "Wuyi Model" that features rational and efficient oasis city development.

When facing the particular environmental conditions of oasis, the green infrastructure of Wuyi new town turned out to be an effective planning strategy to ease environmental pressure, adjust the ecological benefit of urban vegetation and balance the environmental capacity and city's sustainable development.

Endnotes:

- [1] Baoquan Jia, Longjun Ci, The ecological research of Oasis landscape[M], Beijing: Science Press, 2003:159-160
- [2] Jiang Xin, Yonggang Ma, Jianfeng Zhang, Yue Huang, The sensing research of the layout of Urumqi's ecological green land[J], Western Forest Science, 2005.34(2)

References:

- [1] Karen S W. Growing With Green Infrastructure [M]. RLA, CPSI, Heritage Conservancy, 2003.
- [2] Benedict M, McMahon E. Green infrastructure : linking landscapes and communities [M]. Washington, Covelo, London: Island Press, 2006.
- [3] Jane Heaton Associates. Green Infrastructure for Sustainable Communities [M]. Nottingham UK: Environment Agency, 2005.
- [4] Qingji Shen, The evaluation and discussion of "Green Infrastructure for Canadian Municipalities"[J], Urban Planning Forum, 2006(4)

The green waterfront of a city - Where are the limits of good planning? Gdansk case

Aleksandra SAS-BOJARSKA

Faculty of Architecture, Gdansk University of Technology, Poland

The paper presents the role of strategic planning of green areas of waterfronts in shaping the image of cities, and the threats to them which may be caused by wrong planning decisions. The case study of city of Gdansk in Poland serves as an example to illustrate both the values and potential of the seashore landscape and the risk of its possible deterioration.

1. Introduction

Strategic planning of green areas plays important role in shaping the image of cities. It requires broad and complex approach to maintain, improve and develop green system as the important element of city structure. Wrong planning decisions, and exceeding the limits of good planning practice, may cause serious threats to green areas and to the city landscape.

The case study of Gdansk's seashore is presented as an example to illustrate the values and potential of fragile landscape, which can be easily destroyed by the inadequate spatial development. Crossing certain frontiers – not only in physical, but also in mental sense – will be presented as a potential threat to the green waterfront of a city.

The goal of the article is to discuss the planning policy of Gdansk related to its green waterfront in the context of sustainable development, and to assess, whether Gdansk meets the challenges of ecocity in this area.

2. The problem of limits

One of the most important questions to pose by urban planner is, whether there are any limits in the world of nearly unlimited technical possibilities, which should not be exceeded during the process of town development? For sure, there are not any longer technological, physiographic or economic limits. We can construct towns or their fragments, using the best available techniques, even in the most difficult circumstances: in the water (Palm Island, Dubai), on the desert (Masdar, Abu Dhabi), or in the middle of nowhere (Las Vegas, USA). In such cases only high costs are the problem, and the risk is taken by developers. Nevertheless, considering all the circumstances and effects, we should admit that some frontiers of planning should not be crossed.

Crossing certain frontiers may lead to uncontrolled urban growth and sprawl, chaotic development, disintegration, accidental mixture of form and functions, esthetic disturbance, ugliness, chaos of architectural banality, and may create ecological barriers, and various **negative environmental impacts** (water, soil and air pollution, flora and ecosystems degradation, vibration, noise disturbance, light pollution...). They all affect the city landscape, because landscape is the manifestation of the changes occurring in various elements of the environment. The landscape, as the synthesis of all elements of the environment, reflects the character and condition of all natural and cultural city elements, including the built environment (Fig. 1).

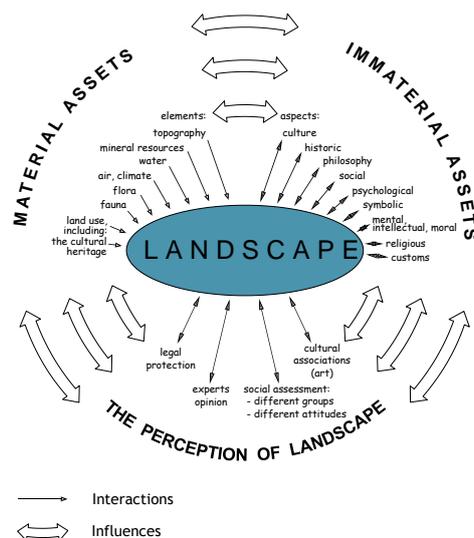


Fig. 1. Landscape – the synthesis of the environment (A. Sas-Bojarska).

The state of the city landscape is a real indicator of sustainable town planning. By protecting the landscape we may improve the quality of life and well-being in cities.

The green areas and city parks play important ecological and social role, so they should become one of the crucial elements of management of metropolitan areas, as well as of governmental and local authorities' policy. It becomes more and more important, especially regarding contemporary trends. The population of towns systematically grows – it is half of world population now, in 2050 it will be 75% [Global City Indicators ...]. So the number of users of city public spaces and green areas, is growing as well. People spend more time in the city because of lifestyle and economic circumstances. The distance to open areas (due to urban sprawl) and the costs of travels (expensive energy) are increasing. At the same time, we predict the growing amount of free time. Therefore, we can observe the growing expectations for the recreation and leisure within the city borders, in attractive green public space, accessible to everyone. They should fulfill the requirements of nowadays social, economic and ecological needs.

The questions to answer in relation to **limits of city growth** should thus be:

- which areas should be excluded from the development, because of environmental and landscape values?
- where and how should we plan the future development?
- to what extent will the city landscape be affected by new development and activities?
- how to predict and mitigate future negative changes?
- what tools should we use for better conservation and protection of the city landscape?
- what is the role of public space in urban planning and how should we plan it?

The answers can help to make better decisions concerning city's sustainable development.

3. Ecocity idea

The fundamental paradigm in decision making process, still seems to be sustainable development. What does it mean in town planning? Complexity of planning (spatial, economic, social and environmental aspects considered together), revitalization, energy saving, environmental protection, public transport system integrated with spatial development, mixed-use development, reuse of space, recycling, considering local circumstances... These and many other aspects are the subject of world-wide discussion as well as of many programs, documents, strategies, rating systems, conferences, competitions and publications.

The document *Ten Principles for Sustainable City Governance*, presented during the world congress of International Federation for Housing and Planning in Copenhagen, Denmark in 2007, presents the need for radical changes, as well as new strategies, models and principles of city governance, supporting sustainable development.

System LEED (Leadership in Energy and Environmental Design) for Neighborhood Development 2009 ND, created by Green Building Council in USA, presents set of environmental standards for the design of buildings, in relation to the neighborhood, surrounding landscape and regional context. It creates guidelines concerning location, design and construction of new developments (residential, commercial, mixed use), related to design and decision-making stage. System stresses the role of local circumstances in defining pro-ecological solutions. System BREEAM (Building Research Establishment's Environmental Assessment Method), created by Building Research Establishment in UK, implemented in 2009, is the "sustainable assessment framework" based on the Regional Sustainability Checklist. The aim of this independent method, used to describe the sustainability of a building, is the assessment of the overall sustainability of a future development (individual buildings, multi-residential and mixed-use developments), at the early master planning stage. One of the sections outlined in the Regional Sustainability Checklist is the ecology, related to ecological enhancement within and around the development, maintaining green corridors and landscaping. BREEAM supports planning system, e.g. allowing efficient use of resources and increasing ecological consciousness.

There are many competitions related to ecological design all over the world. The results of one of them, related to the ecological city of the future, have been described in the book *Self Sufficient City. Envisioning the habitat of the future*, edited in 2010 by the Institute for Advanced Architecture of Catalonia. More than 700 participants from 116 countries presented solutions for implementing the idea of sustainable development. The problem of creation of public spaces as the areas "of freedom and contacts" was stressed as one of most important.

Many authors present the idea of sustainability. Douglas Farr presents the possibilities of pro-ecological design in many scales and aspects, giving examples from all over the world (Farr 2008). He stresses among other factors the need to balance human needs and nature, maintaining ecological corridors, providing walking access to green areas. Herbert Girardet stresses the dependence of man on the environment, and the necessity of lifestyle changes to minimize environmental threats (Girardet 2004). He presents the possibilities of eco-city creation as a challenge for contemporary world, and the socio-economic profits. In the book *Sustainable urban design. Perspectives and examples* (2005) many ways and trends of environmental design are presented, as well as examples from Holland. The need for urban design improvement, as a tool for implementing sustainable development, and the need for improving urban spaces and open spaces have been stressed. The ecological, social and economic aspects, as well as local identity and public participation in contemporary urban planning are underlined. Martin Treberspurg describes the famous example of Linz city in Austria, where the existing city has been extended by building new ecological, densely built district for 10 thousand of inhabitants (Treberspurg 2008). Complexity of design, construction and operation was the base of the success of this model city, combining all pro-ecological features, including public green areas for sport and recreation.

Many conferences in recent years have been related to the city sustainable development: V session of World Urban Forum, Rio de Janeiro, Brazil, 2010 (*The Right to the City: Bridging the Urban Divide*); 46 International Congress ISoCaRP, Nairobi, Kenya, 2010 (*Sustainable City/Developing World*); Expo 2010, Shanghai, China (*Better City, Better Life*); Ecocity World Summit 2011, IX International Ecocity Conference, Montreal, Canada, 2011 (*People. Ecology. Urbanity. Moving Towards Ecocities*); 24. World Congress of Architecture, UIA 2011, Tokyo, Japan (*DESIGN 2050, Environment, Culture and Life*); VI session of World Urban Forum, Napoli, Italia, 2012 (*The Urban Future and the prosperity of cities. Dialog, Network, Exhibit at the World's Premiere Conference on Cities*).

The common goal of all these activities is to help the authorities, developers and designers to implement the ecocity idea in practice. Presented approaches do not reflect all the possibilities related to ecocity, but they give some idea of direction of changes. They all relate directly, or indirectly, to the green areas in the city, and they all stress the need for environmental protection. The result of these efforts will be reflected in the townscape. The idea of ecocity will evaluate and change in relation to environmental, spatial and economic circumstances, as well as the social needs and expectations. One thing we can predict for sure – people will always need green public spaces in close walking distance from their housing estates, and they will always admire attractive city landscape.

4. Gdansk: ecocity?

Gdansk is a thousand-year old city (455 thousand inhabitants) located at the northern coast of Poland, at the seashore. Together with Gdynia and Sopot it creates Gdansk Agglomeration (Fig 2).



Fig. 2. Europe, Poland, Gdansk Agglomeration (A. Sas-Bojarska)

It is the only one of three polish biggest harbours located just at the seashore, not – as the others – at the rivers estuaries. Gdansk reach cultural heritage, complicated history and symbolic events are known worldwide. It is considered as the World Capital of Amber. Here the Second World War started in 1939. The Solidarity movement initiated great political changes, breaking the communistic system in Eastern Europe. Over half a million of tourists visit it every year, not only because of these tremendous facts, but also due to the amazing Gdansk landscape: 23 km of wide sandy beaches from the east and forested hills surrounding the city from the west, the port cranes, sea and the vessels, and a lot of unique historical monuments (Fig 3). They all are unique not only in Poland attractions.



Fig. 3. Some attractions of Gdansk Agglomeration waterfront. The city is almost invisible from the seashore! (Photo A. Sas-Bojarska)

Planning documents have been established to protect these valuable areas. Obligatory documents at national level are e.g.: *Polityka Ekologiczna Państwa* (2009) [translations of all titles of polish documents are attached in the References]; at voivodship level: *Plan zagospodarowania przestrzennego województwa, Program ochrony środowiska dla województwa pomorskiego* (2010); at local level: *Studium uwarunkowań i kierunków zagospodarowania przestrzennego gminy* (2007) and local land use plans. The supportive documents, established especially for Gdansk region, are e.g.: *Pomorskie Studia Regionalne: Studia przyrodniczo-krajobrazowe województwa pomorskiego* (2006), and *Studia obszarów problemowych województwa pomorskiego* (2004), *Studium Lokalizacji Obiektów Wysokościowych - SLOW* (2008), *Program Ochrony Środowiska dla Miasta Gdańska 2011 z uwzględnieniem perspektywy 2012-2014* (2009); *Studium koncepcji regulacji estetyki miasta - Raport z badań przeprowadzonych wśród przedstawicieli Rad Dzielnic i Rad Osiedli w Gdańsku* (2012); *Pas Nadmorski Zachodni. Studium Funkcjonalno-Przestrzenne* (2010).

One of the main goals of *Polityka Ekologiczna Państwa* is the improvement of the state of the environment, implementing sustainable development, and the protection of natural resources and the biodiversity. Main goals have been formulated in *Program Ochrony Środowiska dla województwa pomorskiego*, including: the improvement of the state of the environment and the ecological safety, enhancing the environmental management and improving the ecological consciousness, the protection of natural heritage and rational use of natural resources. The *Program Ochrony Środowiska dla Miasta Gdańska...* established main goals and challenges, including: elimination of noise disturbance, increasing the ecological consciousness, the protection of natural and landscape diversity and stopping the processes of its degradation. The protection and restoration of valuable natural resources, the limitation of development on the green areas, maintaining city green areas as open spaces, shaping the ecological system of natural areas using land use plans, improving the access to natural resources, including the creation and modernization of touristic infrastructure and the protection of valuable and fragile resources, have been especially stressed. In other documents similar goals have been presented.

One could say, that having such goals and guidelines in so many higher level documents, the environmental protection can be implemented without any doubts or problems. However the practice shows quite the opposite situation, especially at the local level.

Spatial order requires taking into account the specific features of Gdansk Agglomeration structure, like its spatial, technical, social and cultural circumstances, as well as its green area system and the landscape (Baranowski 2001).

But in practice these specific features are often being undervalued, ignored, or they have no chance in the comparison with the investment pressure.

Main reason, observed in whole Poland, is the low ecological consciousness not only of the developers, but also of the decision makers and the society, as well as the complicated, not stabile and not effective planning system.

There is a big gap between two main planning documents at local level: *Studium uwarunkowań ...* (scale 1:25000), which plays strategic role for the municipality, and land use plan (scale 1:1000), a legal instrument for the investment procedures. Moreover, the public participation is often treated as inconvenient duty, therefore the society and NGO's, regarded as opponents who disturb the authorities and hinder the process of decision making, are sometimes not fully informed. Public participation in such cases only pretends to be objective and has no influence on decisions, which were already undertaken before. Moreover, the landscape is being considered as less important element of the environment and of city's planning policy, as value which can't be measured. It is not protected sufficiently, especially if it is not formally declared as the area of outstanding natural or cultural values. All these shortcomings are being observed also in Gdansk, thus influencing the image of the city.

Baranowski argues that contemporary situation in Gdansk may be characterized as the process of accidental, disintegrated activities, aiming to gain local selective effects, with no respect to their influence on the whole system. Environmental costs of new developments are being usually ignored (Baranowski 2001). *Studium uwarunkowań...* enables to implement incoherent development.

The SLOW, prepared by the Gdansk Development Office, is not an obligatory document. It seemed to be the most adequate document related to city landscape protection, but it has been negatively evaluated by many professionals. Baranowski says that the content of this document is based on logical mistake. The study defines the areas recommended, indicated, or excluded from construction of high-rise buildings, but it does not answer the fundamental question: whether the high-rise buildings should be built in Gdansk, and what circumstances should be taken into account. In architecture and urban design, the question “how” (“how and where to built?”), should follow the fundamental question “what to built and what for?” and “what kind of function and structure is recommended due to socio-cultural, environmental, economic, spatial and technical circumstances?” These fundamental questions should be the subject of open public debate, with the participation of NGO’s (Baranowski 2009).

Gdansk coastal belt, the natural green “waterfront” of the city, may serve as an example of defective decision making process that allows for chaotic development.

5. Gdansk seashore case

One of the most important elements of Gdansk landscape is its seashore, very valuable because of environmental, landscape and cultural values. Its development and functioning should take advantage of its unique location and features.

The undeveloped, semi-natural, multi-scale green areas, sandy beaches and dunes between Gdansk and Sopot, form part of Gdansk ecological system. It borders the Protected Area *Natura 2000* of Zatoka Pucka Bay, part of the European System of Protected Areas (Fig. 4).

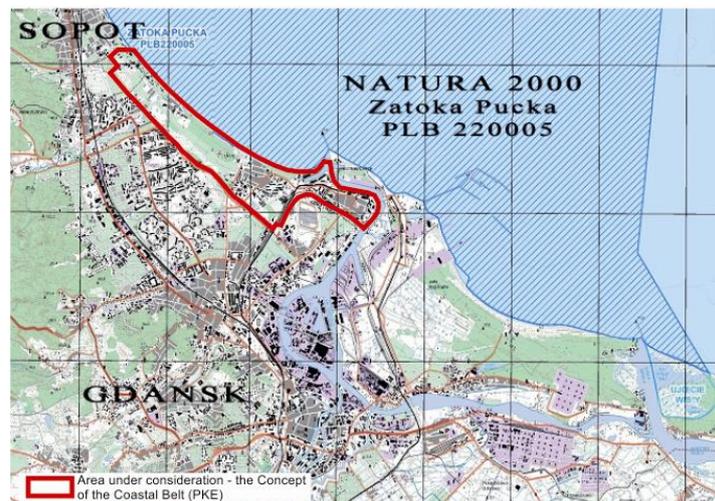


Fig. 4. The area “Natura 2000”, <http://natura2000.mos.gov.pl>, and the Gdansk Coastal Belt.

It is a popular place of recreation for inhabitants of Gdansk Agglomeration and for tourists. At the same time – as very attractive investment area – it is exposed to strong investment pressure and potentially chaotic and environmentally harmful development. Therefore, this area is now a subject of conflict and public debate, followed by many studies, expertises, meetings and workshops.

Due to cultural and landscape role of the waterfronts - shaping waterfront identity of the town, they become the most attractive areas from the economic, social and cultural point of view.

Waterfronts are the exceptional examples of rare spatial values because their dimensions are limited.

They are very attractive to many users with different, often conflicting goals. Therefore, they are often the subject of fragmentation (Baranowski 2001).

Such a situation took place at the Gdansk seashore area. The history of conflict starts in the 1980's, the time of serious economic crisis in Poland. The protection zone of underground water intake at the seashore belt has been transformed by the inhabitants of Gdansk into illegal allotments. After 20 years 800 allotments have been eliminated by the authorities of Gdansk (with some protests). Part of the area was transformed into the Reagan's Park, the biggest park in Gdansk. It became a very popular recreation area for thousands of inhabitants. In 2006, it was awarded as the best public space in Gdansk Voivodship. The rest of the undeveloped area located in coastal belt became very attractive for the investors.

In the meantime, the authorities of Gdansk changed attitude to the policy of coastal belt development. The new *Studium uwarunkowań...* and the SLOW, enabled new development. The policy of privatisation of these green open areas – which should remain public property – resulted in new developments. Two gated communities (gated communities are the subject of criticism for example by BREEAM) and accidental buildings have been built in this area (legally!), causing the landscape fragmentation and imposing physical barriers (Fig. 5). They created a precedence, threatening future decisions. We should stress, that legal building approvals do not comply with the ideas of harmony and sustainable development defined in the planning documents of higher level.



Fig. 5. Gated communities in the seashore area are the examples of dividing not only the space, but also society. They cause the fragmentation of unique public space – common value (Photo: A. Sas-Bojarska).

The *Pas Nadmorski Zachodni...* prepared by the Gdansk Development Office, seems rather to be the catalogue of different concepts, than coherent vision of sustainable development and real guidelines for land use plans. The thesis of this study supports the plans of developers (for example housing estates are presented as a factor increasing touristic attractiveness). The strong opposition of Gdansk inhabitants against high-rise buildings (authors noticed it!) was described as a “problem” of a costal belt, not as the opinion of its users which should be taken into account. Another problem was defined as a conflict with City Historic Preservation Department, not as a real threat to historical objects, which may be caused by investment plans. It shows clearly the attitude of Gdansk Development Office to this area. General guidances presented as a base of the concept pretend to be sustainable,

but in fact they have nothing to do with the final plan, creating real possibilities to build up big fragments of open area of coastal belt.

Therefore new land use plans related to this area (aligned with *Studium uwarunkowań...* and SLOW), accepted by Gdansk authorities, allow for construction of housing estates, leisure and sport centers, multilevel parking facilities and high-rise buildings (hotels, in some parts with no limits of height!) in accidental locations (Fig. 6).

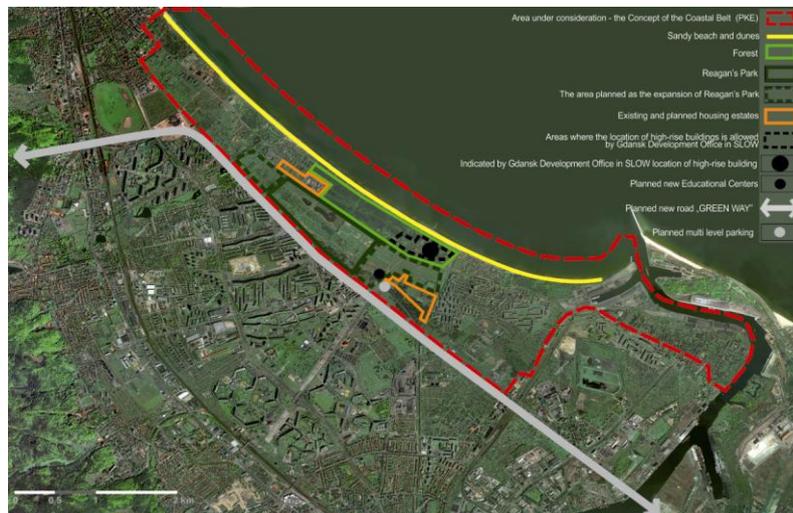


Fig. 6. The Coastal Belt - existing and planned gated communities and planned high rise buildings (A. Sas-Bojarska).

New development may cause serious environmental degradation, e.g. underground water changes, flora degradation, negative landscape impacts, or high traffic growth causing noise and air pollution. But the most serious threat seems to be the fragmentation of open land area, because its dimensions and natural character are the greatest values, especially regarding the close proximity of big housing estates. Therefore, city plans caused serious protests and started public debate on the future of Gdansk seashore.

Polish Ecological Club (PKE) – non-governmental, non-profit organization (the oldest in Poland) was the first institution, which highlighted potential threats and proposed solutions contrary to technocratic vision of city authorities and contrary to commercialization of this unique space. To protect Gdansk seashore, *Spółeczna Koncepcja Zagospodarowania Pasa Nadmorskiego (The Concept of the Coastal Belt)* was prepared in 2010 by PKE and the team of experts. It was the first such a complex initiative undertaken by a non-profit organization in Poland. It was a kind of manifestation against ignoring of public opinion by local authorities (we should remember, that improving public participation and ecological consciousness in decision making process, and supporting initiatives of NGO's and local inhabitants aiming to improve the state of the environment, are still crucial tasks in the *Program for Environmental Protection for Gdansk City!*).

The *Concept of the Coastal Belt* contains natural inventory, social survey, analysis of city plans and urban study (analysis, evaluation, concept and guidelines). During the nature inventory many interesting and protected species have been discovered. The social survey demonstrated that Gdansk inhabitants wish that the coastal belt – as a common value – should remain a public space used for recreational purposes.

The *Concept...* fulfils the guidance concerning the noise disturbance reduction, presented in the *Program Ochrony Środowiska dla Miasta Gdańska*. Coastal belt is the largest area free from noise in walking distance from neighboring big housing estates from 60's and 70's, where thousands of people live (Fig. 7).

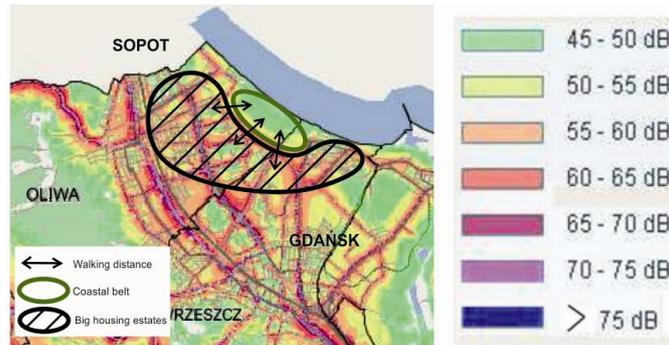


Fig. 7. The acoustic map of Gdansk (road noise) - existing state [Program Ochrony Środowiska dla Miasta Gdańska], the coastal belt and big houses estates (A. Sas-Bojarska).

General rules and guidelines, presented in the *Concept...*, pursue the long tradition of public parks in Gdansk - the first public park in Europe was created in Gdansk in 1832 -1837 (!) (Rozmarynowska 2011). Consequently, the *Concept...* continues the idea of the expansion of Reagan’s Park. The aim of *Concept...* was to sustain the original quality of environment, culture and landscape and to stop the negative changes caused by planned development. Wherever it was possible it included the concept established in the *Studium Uwarunkowań...* However, alternative solutions and important changes have been proposed, to create the “City Garden” at the coastal belt (Fig. 8). For example, areas exempt from new development were indicated within green corridors which are fundamental to maintain the connections between important elements of city ecosystem (coastal belt, Natura 2000, forests).



Fig. 8. The overall Concept of Coastal Belt Development (PKE), www.pke.gdansk.pl

The *Concept...* has been publicly discussed with Gdansk inhabitants, experts and other non-profit organizations during many meetings, symposiums, conferences and public presentations. It has been presented a few times by PKE, with many remarks concerning city plans, to the Authorities of Gdansk and other official institutions. The remarks sought to prohibit the development in some areas of coastal belt, to minimize the height of buildings in other areas, and to incorporate the idea of “City Garden” into the planning documents. Over 2000 inhabitants of Gdansk signed the protest against high-rise buildings in coastal belt in 2011/12. And this was not the casus of NIMBY, because there are no housing estates near the locations indicated in SLOW. The civic protest concerned the availability of public space. But all suggestions presented by PKE have been rejected with no argumentation.

External experts evaluated the *Concept...* as innovative, successful voice in public debate, presenting the vision of sustainable development articulated as real public initiative. They stressed that it shows not only the alternative vision of development of this area, but also the alternative way of thinking about the spatial policy, contrary to city planners' way of thinking. The proposal to create great city garden has been evaluated as fulfilling highest European standards. According to their opinion it should therefore be implemented, regardless of formal difficulties and shortcomings of Polish planning system and economic problems.

The same area was the subject of international workshop *Towards Eco-city. Gdansk seashore area development*, organized at Gdansk University of Technology in 2011, and the subject of students projects at the Faculty of Architecture, Gdansk University of Technology. The *Concept...* served students as the source of information. Students' projects were the continuation of the *Concept...* Students identified the existing environmental, social, spatial and transport conditions and threats, assessed the values and potential of the area, created the vision of sustainable development of the whole area and designed some urban / architectural / landscape objects. They presented many ideas and solutions, stressing the values of Gdansk seashore, and maintaining the continuity of green area, as accessible, well organized and attractive public space (Fig. 9). Therefore they showed the alternative possibilities to create the new image of Gdansk ecocity. Unfortunately, authorities are not interested in such solutions for this area.



Fig. 9 The international workshop *Towards Eco-city*, conducted by the author of the article, Gdansk, 2011 (Photo: A. Sas-Bojarska, students).

6. The outcomes of studies

The discussion of the planning policy of Gdansk should relate, among other topics, to its green waterfront.

The assessment of the proposal prepared by Polish Ecological Club, concerning the alternative development of green waterfront, has been compared to city plans. Theoretical and field studies, comparisons with other case studies, and outcomes from the international workshop conducted by the author, as well as outcomes from student's projects, were the basis to formulate the findings. Gdansk does not fulfill the requirements of ecocity, regarding the policy of its seashore development. Landscape values are not protected sufficiently and may be easily destroyed.

The planning procedures cannot respond only to the needs of those who can defend their rights but also should cater for the needs of those who are voiceless: e.g. urban poor, people with health problems and disabilities, minors and the elderly. The open green areas belong to everybody and any laws allowing any form of discrimination and exclusion (like fencing public open green areas and creating gated communities) are not good examples for cities of tomorrow. They are rather dead end ideas and therefore can be labeled as declining model of urbanization, as we can observe in Gdansk's seashore.

When open land is becoming the subject of development, the fundamental question arises: should we destroy the environment and repair it after years? Maybe it is better to take advantage of the potential of a place and develop it respecting the existing values, and to build up other areas, which are not so attractive, or even degraded? Rich cities sometimes create green areas even on contaminated lands (Barcelona, Berlin, Montreal, Jokohama ...). In this context the policy of Gdansk authorities allowing for accidental development and fragmentation of the seashore area of high environmental and landscape values, seems to be a paradox. The best thing to do with this semi-natural area, is to maintain its character and natural state and preserve it for recreation and sport purposes. It has a potential to become unique in Europe, huge City Garden. Unfortunately, it undergoes negative changes, depreciating values and quality of this beautiful seashore area.

But still there is a chance to protect this unique area. We should look for evolving models. Presented study case proves that there is a need of strategic planning of city landscape, at the level of Gdansk Agglomeration. The landscape studies should be connected with the processes of town planning, especially in the context of rapid urbanization, technological and social changes, and increasing consumption and pressure on the environment. Special tools and methods should be implemented, like Environmental/Landscape Impact Assessment. The growing knowledge on potential environmental consequences of different activities is a warning, showing how serious may be crossing the frontiers of planning. It may in consequence destroy nonrenewable resources, and cause irreversible threats to environmental and landscape values. Values, which often decide about the quality of life in the city. Some of the impacts are irreversible and permanent, while some may be mitigated, although it is usually time consuming and costly. It is better to avoid potentially threatening impacts altogether, than to repair landscape changes. The crucial conclusion relates to the duty of predicting environmental and landscape threats related to the development, caused by wrong decisions. There is the need of reinterpreting the approaches related to city landscape, especially to enhance or restore the green and recreation areas within the cities. Therefore there is a demand to consider the limits of good planning.

7. The lesson for future - towards a better city landscape

European Landscape Convention stresses, that *"the landscape contributes to the formation of local cultures and that it is a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity"*. Landscape plays an important role in the cultural, ecological, environmental, social and economic fields. Its protection and management can create new jobs. It is a key element of individual and social well-being. On the other hand, any development may accelerate the negative transformation of landscapes. Therefore *"its protection, management and planning entail rights and responsibilities for everyone"*.

The problems of green area degradation urge to define new approach to city development and shaping its landscape. The public debates indicate, that the beauty of landscape becomes important for city inhabitants and is being recognized as a factor influencing the quality of life and the future of the city. It becomes significant in city promotion. Well maintained public space becomes the factor of social integration, counteracting the social exclusion (like famous beaches Ipanema and Copacabana in Rio De Janeiro, accessible to everyone).

The awareness is growing that green public space should be an important factor in city planning strategy and policy. Only long-term planning of city landscape, integrated with urban planning (we may call it strategic landscape planning), may be effective. The possibilities and ways of strategic landscape planning should be individually recognized in every case, with the aim to take advantage of city potential, based on its location, history, cultural and natural heritage, identity and tradition.

Each city has its own conditions and ways of sustainable development. For many cities it is the unique landscape, which should be protected and enhanced as the individual ecocity indicator. Landscape may demonstrate the threats to the city environment, as well as its good condition. Beautiful landscapes reflect a healthy, clean environment and spatial harmony. Landscape preservation and improvement can therefore enhance quality of life, and promotes the idea of ecocities.

The thesis presented in this article may support good practice in urban planning, especially in relation to landscape protection and shaping. The role of public participation in decision-making, and the need of reinterpreting the approaches related to city landscape were stressed. It may influence decisions made by local authorities, concerning the green areas in city planning strategy, to value and better protect what already exists.

References:

1. Baranowski Andrzej (2001) „Sprawność i tożsamość struktur przestrzennych Metropolii Trójmiejskiej (aspekt urbanistyczno-architektoniczny)” [„Efficiency and Identity of Spatial Structures of Gdansk Agglomeration (Urban and Architectural Aspect)”], Bulletin PAN KPZK No 199 “Ład Polskiej Przestrzeni. Studium przypadku – Metropolia Trójmiejska” [“The spatial order of Polish space. Case study – Gdansk Metropolis”]
2. Baranowski Andrzej (2009) „Uwagi dotyczące Seminarium “Baltic Towers – Contribution to the City and the Community” [„Remarks concerning the seminar Baltic Towers – Contribution to the City and the Community”], not published, Gdansk
3. BREEAM Communities Fact Sheet, www.breeam.org (2009)
4. City Indicators Facility 2012, www.cityindicators.org
5. Copenhagen Agenda for Sustainable Cities, <http://www.imagineyouenergy-future.eu/blog/index.php/2009/04/15/38-10-principles-for-sustainable-city-governance>
6. European Landscape Convention, Florence, 20.X.2000
7. Farr Douglas (2008) Sustainable Urbanism. Urban Design with nature, New Jersey
8. Girardet Herbert (2004) CitiesPeoplePlanet. Liveable Cities for a Sustainable World, Wiley Academy, Great Britain
9. LEED 2009 for Neighborhood Development Rating System, Congress for the New Urbanism, Natural Resources Defense Council, the U.S. Green Building Council
10. Polityka Ekologiczna Państwa na lata 2009-2012 z perspektywą do roku 2016 [National Ecological Policy 2009-2012, perspective to 2016] (2009, Monitor Polski Nr 34, poz.501)
11. Program Ochrony Środowiska dla Miasta Gdańska 2011 z uwzględnieniem perspektywy 2012-2014 [The Program of Environmental Protection for Gdansk City 2011] (Gdansk City 2009)
12. Społeczna Koncepcja Zagospodarowania Pasa Nadmorskiego [Concept of the Coastal Belt] (2010) Polski Klub Ekologiczny, Gdansk
13. Sustainable urban design. Perspectives and examples (2005) Veenman Drukkers, Rotterdam
14. Studium Lokalizacji Obiektów Wysokościowych [Study of Location of High-rise Buildings], (2008) Gdansk City
15. Studium uwarunkowań i kierunków zagospodarowania przestrzennego miasta Gdańska [Communal Study of Conditions and Directions of the Spatial Plan of Gdansk] (2007)
16. Ten Principles for Sustainable City Governance (2007) International Federation for Housing and Planning (IFHP), Copenhagen
17. Treberspurg Martin (red.) (2008) SolarCity Linz Pichling: Sustainable Urban Development, SpringerWien, Wien
18. Rozmarynowska Katarzyna (2011) Ogrody odchodzące...? Wydawnictwo słowo / obraz / terytoria sp. z o.o., Gdańsk, Poland
19. Pas Nadmorski Zachodni. Studium Funkcjonalno-Przestrzenne [Western Coastal Belt: Functional and Spatial Study], Gdansk Development Office (2010).

“The Future is Urban” Challenge of Sustainable Urban Development in the Caribbean: The Search for Sustainable Urban Forms

Stacey THOMAS, the University of the West Indies (UWI), St. Augustine, Trinidad.

Abstract

The purpose of this paper is to provide an overview of urbanisation in the Caribbean and to determine a way forward in achieving sustainable urban development. The Caribbean has had a long urban history, yet urban management has not played a significant role in guiding development. Limited resources make future planning imperative in the region and urban form is being explored as an option. Increasing urban populations coupled with the peculiarities of the Caribbean urbanisation process, leave governments and policy makers grappling with how to manage and guide future urban development in a sustainable manner. Will urban form either through compaction or decentralisation be the way forward?

Keywords: sustainable urbanisation, Caribbean, urban form, development

1.0 Introduction

Current statistics by the United Nations (UN), show that the Caribbean is one of the most highly urbanised regions in the world, with 66.2 percent of its population living in urban settlements (UN, 2011) – a proportion almost twice as high as those for Africa and Asia (39%). Yet, this data belies the popular representation of Caribbean life, a fact which may give insight into the low priority given to urban specific policies. With the exception of the larger cities - for example Port of Spain and Kingston – Caribbean urban environments do not discernibly represent severe environmental degradation (Heileman et al., 2003). Since urbanization and urban planning are not viewed as crucial issues, the consequence has been ineffective land use, culminating in the avoidable loss of valuable lands which could be used for other pressing environmental and social interventions (UNEP, 2003). Prior land use decisions, coupled with the continued growth of urban populations, have meant that environmentally sensitive and hazard-prone areas such as mangroves, hillsides and flood plains are increasingly being utilised for development.

Understanding the problems related to urbanisation in the region however, is a less complicated enterprise than finding solutions. Historical, physical and contemporary forces - which have shaped Caribbean urban development - only add to the complexities of managing the urban sphere. While several publications have addressed the urban issues of Latin America and the Caribbean (LAC) collectively (e.g. UN-Habitat, 2009, 2012), according to Potter (1989), literature covering the related issues of urbanisation, territorial planning and development options specific to the Caribbean region is limited. As Portes et al. (1997) state, generalisations about urbanisation in LAC have been mainly based on the experience of the larger countries and applied by extension to smaller ones. Hence, urban trends and projections for the LAC aggregate will naturally mask considerable regional diversity (e.g. Beall et al. 2010). Although common features can be observed such as urban primacy and large urban populations, variations will be reflected in both the *nature of* and *response to* urbanisation and its problems (Drakakis-Smith, 1995). The negative impact of non-indigenous solutions is highlighted in the document by UN-Habitat (2002) 'Sustainable Urbanisation: Bridging the green and brown agenda', which states:

"..... the current situation in developing countries has its roots in a history of urban development which has frequently been characterised by inappropriate policy. Early attempts in replicating the approaches and solutions developed by the urban agenda in developed countries were ineffective at best and counter-productive at worst"

Caution must therefore be exercised before policies that were created *by* and *for* other regions are adopted. As part of the effort to address urban problems, the region has already been looking to internationally formulated models. One such model is that of the 'compact city'. Internationally, the compact city has almost become synonymous with sustainable urbanisation, yet the arguments raised by the imperative of sustainable development in *developed* versus *developing* countries highlights the issue of transferability. This challenges the viability of the compact city model in achieving the goals of sustainability in the Caribbean context. The paper first addresses the meaning of sustainable urbanisation and the ongoing debate concerning compact city form as a response mechanism, drawing parallels between the sustainability goals in cities of the developed nations versus the Caribbean.

2.0. Sustainable Development and Sustainable Urbanisation

Sustainable urbanisation principles find their genesis in the concept of sustainable development, a term first popularised by the Brundtland Report. The report defined sustainable development as ".....development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). While most agreed that sustainable development was a noble and necessary objective, it was the source of much global debate about the sustainability of the world's environment and economy. Today we understand sustainable development to be the convergence of the goals of environmental preservation, economic growth and social equity; however, the concept still remains elusive. The constraints and contradictions of the premise become quite apparent when attempting to move from theory to practice (Mitlin and Satterthwaite, 1996). Some of the main issues include (1) the continued dominance of economic growth over environment and society (Giddings et al., 2002), (2) the significance of individual responsibility i.e. the impact of lifestyle, consumption and behaviour (Spaargaren et al, 2000), (3) equating 'development' with economic growth (Purvis et al, 2013), (4) avoidance of the questions of power, exploitation and even redistribution (Robinson et al., 2004). While we could go on, the goal here is not to enter into the debate on sustainable development but to highlight the difficulties in operationalising the concept. As we will show, much of the contention surrounding sustainable development has pervaded the discussion on sustainable urbanisation.

2.1. Urban Form and Sustainability

Given the premise that there is a strong correlation between land use characteristics and consumption, it is expected that urban form would become a focus for urban sustainability. As with the discourse on sustainable development, consensus on the need to promote sustainable cities is underlain by significant differences regarding what urban sustainability means and how to promote it. Central to the debate is how cities should be developed in the future, and what effects, if any, does form have on resource use and social and economic sustainability. The relationship between form and sustainability is therefore a contentious one. According to Brehney in Jenks (1996), the scope of the debate is heavily polarised between those who favour decentralisation and those who believe in the virtues of high density. The compact city is viewed as the antithesis to the current 'sprawling' development patterns which are deemed unsustainable. The vast literature on urban form however, shows the debate is tending to favour

heavily one solution i.e. the compact city, though questions as to how compact is sustainable and how sustainable is compact have yet to be answered.

Compaction vs. Sprawl

Urban sprawl as defined by Nelson et al. (1995) is: "...low density, mismanaged, and uncoordinated single use development that does not provide for a functional mix of uses and/or is not functionally related to surrounding land use". This type of development tends to be characterised by automobile dependence, excessive land consumption, congestion, socioeconomic segregation due to exclusionary housing markets and significant infrastructure provision costs (see Carruthers and Ulfarsson, 2002; Burchell and Mukhrji, 2003; Sturm and Cohen, 2004). Bruegmann (2006) however, contends that sprawl is not an "aberration in history but the norm", stating that throughout history high density was almost always considered "the great urban evil". This reveals what Neuman (2005) refers to as the 'paradox' between urban desirability (compaction) and suburban liveability (sprawl). In many cases, sprawl has been encouraged with support from public financing of infrastructure to service the developments of mortgage subsidies to promote homeownership. The attractiveness of 'suburbia' is therefore undeniable and one of the main criticisms lay against supporters of compact city development with regards to quality of life.

According to Scheurer (2001), "the compact city paradigm seems strangely out of tune with the realities and the momentum of everyday life within sprawl". It is a habitat of adequate extent to be of central importance for the future of cities and though condemned by compaction theorists, it is unlikely that sprawl will cease to exist. So strong is the draw of suburbia that according to Blowers in Breheny (1992) "people will be prepared to put up with a great deal more congestion, pollution and general environmental deterioration, so long as they continue to enjoy the freedom and comforts of modern consumerist society". This has led many to believe that a compromise position is required which balances the benefits of urban desirability with suburban liveability (Breheny in Jenks, 1996).

But what, if any, are the benefits offered by more compact models of development? While the compact city has practically become the synonym for the sustainable city, what exactly is it? Despite the terms common usage, there is little by way of a working definition, making differentiations between what *is* and what *is not* compact urban form difficult. Density, though one of the main features, is quite insufficient in describing the compact city (Burton, 2002). Further refinement of the concept has been advanced through practice and research (e.g. Elkin et al., 1991; Goodchild, 1994; Williams et al., 1996; Burton, 2000) to include characteristics such as mixture of land uses, residential density and transport infrastructure. Though not exhaustive, Figure 1 lists some of the characteristics required for compact city development. Essentially this type of development is intended to: be more energy efficient - particularly in the area of transport, conserve land resources, reduce infrastructure costs, reduce greenhouse gas emissions and improve the general quality of life. Conceptually, compact cities make sense, if 'sprawl' is bad then 'compact' must be good? The ideal has given way to reality in terms of whether intensification can actually deliver on its promises of a more sustainable urban future.

Many of the claims made in support of compaction have been proven through practice, to fall short of expectations. Testing the relationship between certain indicators of urban form to selected environmental variables has been inconsistent and oftentimes contradictory (Crane, 2000; Hall, 2001). This has led several researchers to argue that associations previously assumed to exist between urban form and a number of sustainability benefits were either unsubstantiated by fact or dependent on a range of intervening variables – some of which were far more significant than urban form (Williams et al., 2000). For example, the scientific case for

Compact city characteristics.

1. High residential and employment densities
2. Mixture of land uses
3. Fine grain of land uses (proximity of varied uses and small relative size of land parcels)
4. Increased social and economic interactions
5. Contiguous development (some parcels or structures may be vacant or abandoned or surface parking)
6. Contained urban development, demarcated by legible limits
7. Urban infrastructure, especially sewerage and water mains
8. Multimodal transportation
9. High degrees of accessibility: local/regional
10. High degrees of street connectivity (internal/external), including sidewalks and bicycle lanes
11. High degree of impervious surface coverage
12. Low open-space ratio
13. Unitary control of planning of land development, or closely coordinated control
14. Sufficient government fiscal capacity to finance urban facilities and infrastructure

Figure 1: Compact City Characteristics

Source: Newman, 2005

compact cities has been centred on the supposedly lower levels of travel and hence lower levels of fuel consumption and emissions associated with higher densities. Yet, Hall (2001) propose that travel had a much stronger relationship to fuel prices and income than density.

The fatal flaw is the reductionist view that compact city proponents have of urban areas. As Durack (2001) asserts "...science has discovered that we cannot understand the world by reducing it to its constituent parts and examining the laws under which these parts behave". Despite the challenges concerning 'burden of proof' the main concern is whether or not the 'compact city' is actually sustainable. According to Newman (2005), "preliminary evidence testing the compact city with regard to sustainability suggests that the relationship can be negatively correlated, weakly

related, or correlated in limited ways'. This idea of sustainability and the compact city is explored by Burton (2000) and Hofstad (2012). Burton (2000), in a review of twenty five English cities, found that social equity – as measured by forty four indicators – had a mostly negative relation with compactness. Hofstad (2012) on the other hand, assessed the economic, environmental and social goals linked to densification and mixed use development in four Scandinavian countries. Through this research, it was evident that *economic* considerations "enjoyed the more favourable position", while social and environmental goals had a low level of impact on real planning outcomes.

Based on the ongoing discussion, claims for the compact city are neither self evident nor as yet convincing as concluded by Welbank in Jenks (1996). Nevertheless, these critiques of the compact city model do not advocate for a return or continuation of sprawl, but shows that "all hope of achieving sustainable urban form should not be pinned on just one option" (Williams et al., 2000). That being said, Thomas and Cousins (2000) propose that *any* future urban development form will need to address the issues of: accommodating growth, energy consumption, accessibility, economic viability, ecological integration and protection, political achievability, popular aspirations of quality of life and the burden of proof of success. Any changes in the built-environment are a major, costly undertaking and should not be performed without a deeper assessment of the forces driving changes at the urban level.

3.0. The Caribbean Urban Experience

Contrary to the stereotypical representations of the Caribbean with their miles of white sandy beaches and warm tropical breezes, the region has had a long and distinctive urban history. Since the 1950s the level of urbanisation in the Caribbean was already exceptionally high, with 35 percent of its population living in urban areas. By 1970, the figure rose to 45.6 percent and as of 2010 urban population has increased significantly to 67 percent (UN, 2011). Interestingly, Table 1 shows that Caribbean urbanisation levels have exceeded those of the world in aggregate, keeping pace with the More Developed Regions (MDR) as well.

Table 1. Comparative levels of urbanisation in the Caribbean, 1950 - 2011

Year	Total population of the Caribbean living in town and cities (thousands)	Total MDR population living in town and cities (thousands)	Percentage of total population living in urban areas		
			Caribbean	World	MDR
1950	6 301	441 845	36.9	29.4	54.5
1970	11 537	670 573	45.6	36.6	66.6
2011	28 106	964 240	67.0	52.1	77.7

Source: UN World Urbanisation Prospects (2011)

Despite these surprising statistics, Caribbean cities and their *process* of urbanisation are considered an underexposed phenomenon (Jaffe, 2008). Very little has been published in relation to issues of urbanisation, territorial planning and development options specific to the Caribbean region (Potter, 1989). The study of Caribbean cities is essentially a study in the effects of globalisation, regarding its economy, polity and society. According to Mintz (1971), as the first part of the non-Western world to endure an era of intensive Westernising activity, the Caribbean became 'modern' in some ways even before Europe itself.

3.1. The 'Urban Bias'

The urbanised nature of Caribbean nations has its genesis in the mercantile and colonial eras, where the form and function of Caribbean cities, articulated in their spatial, social and economic features, are rooted in that history. This legacy is apparent in the form of dependent urbanisation, the realities of which are clearly expressed in the highly skewed and spatially uneven settlement patterns found throughout the region (Potter, 1989). Colonial settlements normally proceeded through one – or in some instances a limited number of - coastal gateways. These port cities were not created as centres of industrial development but primarily served as points of administrative, commercial, political control and points of extraction. However, the global flows and colonial powers that shaped the Caribbean in the past are continued in the form of present-day dependencies. The post independence era saw the newly independent territories seeking prosperity and ultimately "equating the state of development with the process of urbanisation and industrialisation" (Potter, 1989). Economic development in sectors such as tourism, manufacturing, service and industry resulted in further intensification of infrastructure expansion within cities and coastal areas. This in turn makes the capital city even more attractive for future growth. As Potter (1989) states "...the geographic pull of accessible and previously well developed sites with good infrastructural facilities for industry and of safe scenic beaches with regard to tourism, have served to skew recent developments to those very same coastal locations that centuries earlier had first attracted mercantile capital".

The pull of the city is evident in the proliferation of urban primacy throughout the region. Urban primacy – the percentage or share of national population living in the largest city or town - is a characteristic of urbanisation in the Caribbean (see Fig. 2). In the smaller Caribbean island nations this could not be otherwise, because their size prevents the existence of many secondary cities and, hence, the development of a sizeable urban system (Portes et al., 1997). In more recent times, the physical expansion of cities and economic development have led to the emergence of new urban expressions across the region and established phenomena such as conurbations, metropolitan areas, and urban development corridors for example POS in Trinidad, Bridgetown in Barbados, Castries in St. Lucia and New Kingston in Jamaica (Ransawak et al., 2005)

Typically the Caribbean primate city tends to attract to itself a disproportionately large share of the island's wealth, political power, professional talent, skilled labour, health, education, and other social services. Reinforcing this primacy is the policies of past and present governments in combination with the centripetal agglomeration effect of market forces. This skewing of resources towards urban sectors has been done at the expense of rural development. As Cross (1979) so pertinently conveys, "People have been prised from the land by the impossibility of making an adequate income and weaned from it by education that has effectively denigrated agricultural employment".

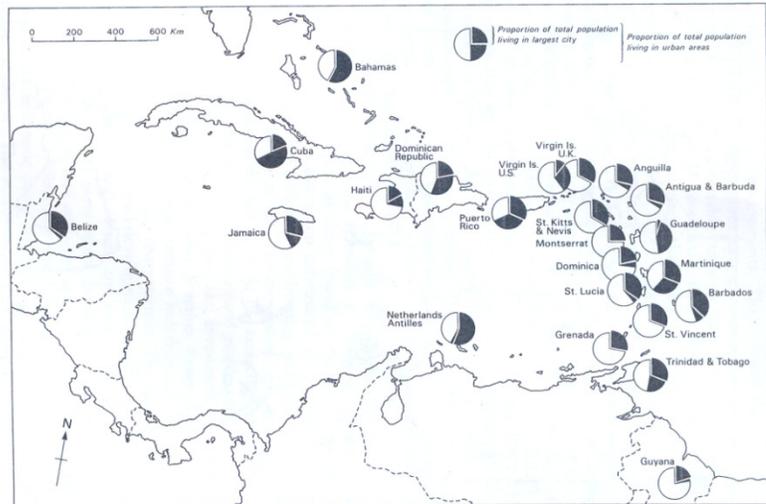


Figure 1: Levels of urbanisation and urban primacy in the Caribbean
Source: Potter (1989)

This has caused the agricultural sector to be relegated to insignificance in many islands, a factor which may potentially explain the continued annihilation of prime agricultural lands for housing and other types of development. Considering all these factors the ultimate concern is whether this form of development is environmentally and socially sustainable in the future.

3.2. Urban sustainability in the Caribbean

Despite its highly urbanised character, urban settlements are hardly on the Caribbean development agenda. While the region understands the sustainability issues being experienced locally, it has been more of a debate concerning a development agenda as opposed to an urban development agenda. Most of the research and documentation concerning urban sustainability in the Caribbean is largely driven by international organisations such as the United Nations and the World Bank. However, several problems arise in analysing the data presented. First is the issue of the LAC aggregate, generalisations about urbanisation in this grouping tend to be based on the experience of the larger countries (e.g. Mexico and Brazil) and applied by extension to the smaller ones (Portes et al., 1997). Hence, urban trends and projections for the LAC aggregate will naturally mask considerable regional diversity (e.g. Beall et al. 2010), making the information less useful for understanding the Caribbean context. Second is the very definition of urban areas. The data used in urbanisation reviews do not relate to the *process* of urbanisation but to urban population growth, the latter being a function of the respective governments' definition of 'urban'. The implications of the range of definitions for urban areas can be seen in the array of populations and areas attributed to selected Caribbean Islands. For example statistics for Anguilla – based on a lack of available data - state that the island is 100% urban, however this represents a population of 12,000 while the total land area is 90km². This statistic does not infer any spatial information that may be of use in understanding urbanisation in the Island.

Steps however, have been taken to focus on the issues of the Caribbean region. Within the United Nations, the Small Islands Development States (SIDS)-Unit, located within the Division of Economic and Social Affairs (DESA), is exclusively engaged with the region. Two core documents form the basis of their work: the Barbados Program of Action (BPOA, signed 1994)

and the Mauritius Strategy for the Implementation of the BPOA. Still, neither of these documents focuses specifically on urban issues nor do they often make reference to urban specific policies. Despite these limitations we can still attempt to extrapolate the issues which affect the sustainability of urban areas and by extension national sustainability. The following table gives a summary of the main challenges facing future urban management within the Caribbean region. It can be observed that the most obvious challenge that islands have to endure relates to their geographic limitations of small size and isolation, as well as the acute external economic orientation. In the case of the Caribbean size matters. It influences every aspect of development in some way, hence, the major long-term land management issue in most islands is to balance economic growth with conservation of limited land space.

Table 2: Challenges to Urban Sustainability in the Region

Factor	Challenge to urban sustainability
Small Size	Limited space for expansion High competition between land uses Immediacy of interdependence in human-environment systems (provisioning services) Limited Resource base
Physical	Limited developable land (topographic constraints) Increased cost of infrastructure provision Low lying coastal zone Susceptibility to natural hazards (hurricanes/earthquakes/volcanic eruptions)
Demographic factors	Limited human resource base Small populations High urban growth rate Urban primacy Concentration of population in coastal zone Dis-economies of scale leading to high per capita costs for infrastructure and services Mobility explosion
Economic Factors	Small economies; limited fiscal base Dependence on external finance Growing middle class Dependence on natural resources for economic development High specialisation of production High dependence on energy imports

Source: adapted from sources: Pelling and Uitto (2001), Lockhart et al. (1993), Conway (1998), Armstrong and Read (2006) and Slade (1999)

Albeit, if the current urban development trajectory continues, it serves to undermine any potential rewards made in other conservation policy areas. Rapid, unplanned and uncontrolled urban growth has characterised Caribbean towns and cities since the 1960s (Barker in Palmié et al. 2011) resulting in urban sprawl, inadequate housing in inner cities and squatter settlement in vacant and often hazard prone areas. The general dominance of decentralisation trends have been effected by both private and public enterprise. According to UN-Habitat (2009), “permissive land-use planning and the growth of affluent populations have facilitated urban sprawl, which in turn has contributed to the number of cars, distances travelled, length of paved roads, fuel consumption, and alteration of ecological systems”. For example Table 3 shows the vehicle ownership and associated road network for a sample of Islands. Interestingly, out of a list of 167 countries St. Kitts and Nevis, Barbados, St. Lucia, Dominica and Trinidad and Tobago ranked 39th, 42nd, 47th, 48th and 51st respectively. Based on local studies however, these values may be significantly higher, recent statistics for Trinidad and Tobago show that while the annual population growth is of the order of 6,500 to 8,500 persons, the annual rate of growth for private cars is currently about twice the national population growth (Newsday, 2012). This means car numbers are increasing more rapidly than population.

Table 3: Upper Middle Income countries

Country	Total Land Area (sqkm)	GDP Per Capita (constant 1995 US\$)	Vehicle ownership (per 100ppl)	Gas Prices (US\$ per litre)	Paved Roads (km)	Highways (km)
Barbados	430	8610	188	\$1.00	1600	1793
St Kitts and Nevis	360	6535	223	\$3.27	163	320
St Lucia	620	3771	166	\$1.26	48	1210
Dominica	750	3291	163	\$1.40	393	12,600
Trinidad and Tobago	5130	5553	151	\$0.36	4,252	8320

Source: CIA factbook

This trend has significant consequences for both the energy and infrastructure sectors. The main issue here, is that Caribbean countries are heavily dependent on fossil fuels. Up to 50% of their export earnings, including revenues from tourism, are spent to import oil products. Economic growth and increased energy demand are closely linked, Figure 3 shows that economic development contracts as a result of higher oil prices. In Barbados, the two largest consumers of imported fuel are electricity generation at 50% and transportation at over 30%, where electricity generation accounts for 74% of all CO₂ emitted by the country and transport contributing 14% (European Commission, 2006). Despite this, the Caribbean is considered a very low emitter of CO₂. The annual CO₂ emissions per country table, lists the Caribbean at 0.3% of the total carbon emissions worldwide. However, when emissions from land use change are taken into account, the results are slightly higher (UNEP, 2001).

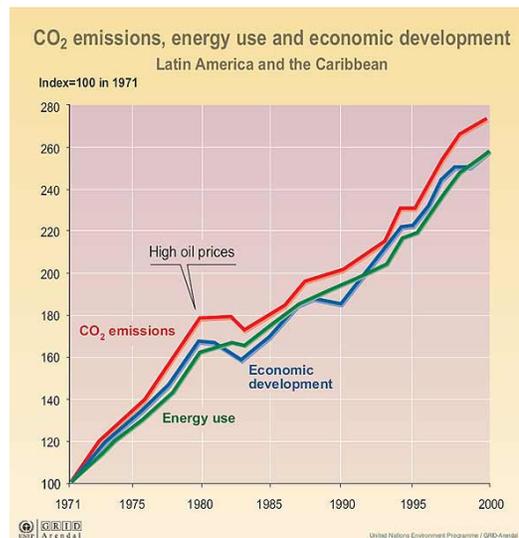


Figure 3: energy use and economic development

Source: World Resources Institute

Fuel imports represent approximately 21% of the regions GDP, a figure which is almost four times the cost of food imports, such large expenditure on fuel leaves little for investment in other key development areas (CNULM, 2012). On average the region spends less than 2% of GDP on infrastructure, while 3-6% is needed to simply catch up with urbanisation and population levels (Fay et al., 2007). Essentially governments are the main providers of major infrastructural projects in the region, with little input from private enterprise. This general dependence on the 'public purse' means that resources are stretched to their limits, a fact particularly evident in the housing sector. The region has continued to grapple with the issue of affordable housing provision to meet the needs of the population. According to Rambarran (2013), in Trinidad and Tobago, the median price for a 3-bedroom house (with land) increased from TT\$237,770 (US\$36,920) in 1993 (when the economy had stabilized after almost a decade of negative growth) to TT\$721,481 (US\$112,031) in 2003 just before the economy was about to experience its third energy boom. At the end of September 2012, the median price for a 3-bedroom house jumped to TT\$1.0 million (US\$155,279). The search for solutions to housing shortages –by both private and public entities - has led to the acceleration of urban sprawl, as low-priced undeveloped sites, particularly agricultural sites, on the periphery of urban areas are being acquired for housing developments.

In spite of these limitations, there have been major improvements in access to water, health, education, sanitation, electricity, income, telecommunications, ports and airports. Based on data from the UNDP Human Development Index (HDI) the Caribbean countries fall within the Very High Human Development countries (Barbados), High Human Development countries (Antigua and Barbuda, Bahamas, Belize, Dominica, Grenada, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Trinidad and Tobago) and Medium Human Development countries (Guyana and Suriname). The question now is what does all this mean for future urban development?

3.3. The Urban Sustainability Challenge: Is Compact Urban Form an option?

While the dominant motive behind the sustainability imperative is global warming and hence the reduction in greenhouse gases, the Caribbean is a low emitter of carbon and is more concerned with other priority areas such as impacts of climate change, economic growth, energy costs and retaining the provisioning function of natural areas. Most of the challenges are consumption-related and are linked to demands on key resources such as land, water, energy and food security. Data presented in the previous sections show that the region already features many of the problems experienced by more developed countries, however, limitations due to sheer size, capacity and resources in light of rapid population and economic growth make the search for solutions critical (Gakenheimer, 1999). Given the regions sustainability goals can compact urban form be seen as an entry point to more sustainable urbanisation? While many of the benefits attributed to compact city development converge with the sustainability goals of the region at certain points they also diverge at others. From the research it is evident there are three major obstacles to the implementation of compact city form (1) Data Availability (2) Geography and Climate and (3) Feasibility.

It became obvious during the course of this research that very little urban data exists for the region. Several documents touch on urbanisation as a root cause of ongoing environmental degradation, but little has been done by way of analysing the very nature of the urban development that is currently taking place. Pertinent information required to make decisions concerning urban sustainability is absent. Knowledge of urban densities, how the city functions, transport systems, distribution of land uses, the urban morphology and how exactly energy is being utilised are significant contributors to understanding the links between urban land use and resource consumption. Given the distinct physical and geographic characteristics of the Caribbean, data scarcity proves to be even more critical to achieving sustainable urban development.

Population densities for the Caribbean are relatively high - a function of both limited developable land and small size. For comparison's sake, the entire island of Anguilla is 134 sq km (52 square miles) the size of Washington, D.C and Barbados has a population density of 621 persons per sq km, twice the population density of the United Kingdom and three times that of Japan. It therefore seems like a contradiction to define development as low density or sprawl. So at what point do we call city expansion sprawl? The problems lie more in the pattern of development along coastal strips and consumption of ecologically sensitive and productive areas. Approximately 60% of the Caribbean's population already lives within 1.5 km of the coast where the risk of submergence, flooding and storm surges is heightened (Simpson et al, 2010). Any intensification of development within these cities would therefore place more people and critical infrastructure into already vulnerable locations. Climate Change adaptation is essential for future urban development, yet little is mentioned within the compact city discourse concerning building resilience to the impacts of climate change. Failure to adapt to climate change could cost an estimated average of 5% of 2004 GDP across the Caribbean by 2025. Predicted costs rise

to as much as 75% by 2100 for smaller nations. Other interventions such as building design and green infrastructure measures may prove to be more implementable and economically viable options.

As discussed earlier any development options are based on economic objectives. In the Caribbean context economic growth and energy demands are tightly linked. Energy has become central to the Caribbean region's existence. The Electricity and transportation sectors are the two most prevalent applications. Necessity, convenience and luxury have been the drivers of this dependency that does not seem to subside, even in the face of global climate change (ECLAC, 2009). The main issue with regards to energy is not necessarily emissions but rather the high cost of import. While densification and intensification may bring marginal benefit, greater benefits would be gained from utilizing alternative energy sources such as wind, solar and hydro power. While the provision of combined heat and power (CHP) is a selling point for the compact city, the Caribbean does not require heating but rather cooling, and denser development leads to higher cooling costs due to the Urban Heat Island effect. It is also suggested that urban form may do little in terms of the mobility explosion occurring in the region. The Central Business Districts of many islands are in decline, losing residential populations, yet, due to urban primacy, they maintain large transient populations accessing employment and other services. Therefore decentralisation of these activities to other peripheral concentration nodes may prove more beneficial than increasing residential densities within the city. Other factors such as climate, lifestyle and gas prices may also influence the applicability of other transport modes such as walking and bicycling.

Policies which affect land use are also inextricably bound with overall strategies of economic development and thus by extension to societal and political goals. The enormous debt burden of many islands – which already severely hampers their development options – limits their capacity to invest in the urban sector. In the face of scarce economic and financial resources, short government term-limits, and fragmented political publics, some governments make decisions which may provide short term benefits with negative long term effects. Overall there seems to be a general lack of commitment to sustainable development objectives. For example while theoretically there has been a commitment by governments of the region to the principles of sustainable development (e.g. BPOA, MDG), the implementation of the BPOA had fallen short of expectations and has yielded considerably fewer concrete results than were anticipated (UNEP 2003). One reason for this according to Williams (2003) is that in many islands bureaucratic infighting and passive resistance often lead to paralysis and an inability to take any action towards sustainable development imperatives. While urban planning is viewed as the mechanism for managing land use, it is a slow and protracted process in many of the islands. In many instances notwithstanding the resources, finances and time in preparation of development plans and legislation, there is perceived to be a general malaise with regard to implementation of projects and adoption of many policies.

4. Conclusion

Planners in rapidly urbanizing regions in the Caribbean are under immense pressure to address urban issues and thus they often propose short sighted planning measures. The multitude of pressing problems that confront the region—such as informal settlements, environmental degradation, resource exhaustion, and underdeveloped infrastructure—necessitate immediate attention by planners. However, it becomes difficult to advocate for *any* type of sustainable urban form, compact or otherwise, with limited supporting documentation and a general lack of research on urban areas. Population statistics convey little of the social, political, economic, and demographic changes which predicate the increasing trend towards urbanisation. It would

therefore be imprudent to attempt to advance simply by translating a few physical continental solutions to the Caribbean. While a level of compaction is desirable, there are many other factors which need to be assessed. Therefore, increasing the scope of national assessments to include the urban sector with regards to the relationships between urban densities, city functions, transport systems, urban hazard vulnerability, urban morphology and energy use will allow planners to leverage government support for a more sustainable city form.

REFERENCES

- Beall, Jo, Basudeb Guha-Khasnobis, and Ravi Kanbur. *Urbanization and development: multidisciplinary perspectives*. Oxford University Press, 2010.
- Berke, Philip and Conroy, Maria. 2000. Are we planning for sustainable development? An evaluation of 30 comprehensive plans
- Breheny, M. 1992. The contradictions of the compact city: a review, in *Sustainable Development and Urban Form* (ed.
- Bruegmann, Robert. *Sprawl: A compact history*. University of Chicago press, 2006.
- Burchell, R. and Sahan Mukherji (2003). "Conventional development versus managed growth: the costs of sprawl." *American Journal of Public Health* 93(9): 1534-1540
- Burton, E. (2000). "The Compact City: Just or just compact? A preliminary analysis." *Urban Studies* 37(11): 1969-2007.
- Burton, E. (2002). "Measuring urban compactness in UK towns and cities." *Environment and Planning B: Planning and Design* 29: 219-250
- Carruthers, J. and Gudmundur Ulfarsson (2002). "Fragmentation and sprawl: evidence from interregional analysis." *Growth and Change* 33(3): 312-340.
- Conway D (1998) Microstates in a macroworld (in eds. Klak T) *Globalisation and Neo-liberalism in the Caribbean context*, Rowman and Littlefield, Oxford, 51-63.
- CNULM. Caribbean Network for Urban and Land Management. 2012. Strengthen Research Development and Uptake Capacity in Urban, Land and Municipal Management in the Caribbean: Final report for the use, adaptation and management of technology for the urban sector. Blue Space. Trinidad.
- Crane, R. 2000. The impacts of urban form on travel: An interpretive review. *Journal of Planning Literature* 15:3-23.
- Cross, Malcolm. *Urbanization and urban growth in the Caribbean: An essay on social change in dependent societies*. Vol. 1. CUP Archive, 1979.
- Drakakis-Smith, David. "Third world cities: sustainable urban development, 1." *Urban Studies* 32, no. 4-5 (1995): 659-677.
- Durack, R. 2001. Village vices: The contradiction of new urbanism and sustainability. *Places* 14 (2): 64-69.
- ECLAC. Economic Commission for Latin America and the Caribbean. 2009. A Study on Energy Issues in the Caribbean: Potential for Mitigating Climate Change.
- Elkin, T., Duncan McLaren, et al. (1991). *Reviving the City: towards sustainable urban development*. London, Friends of the Earth
- European Commission (2006) *EU Energy and Transport in Figures*, Statistical Pocketbook 2005, European Commission, Brussels.
- Fay, Marianne, and Mary Morrison. *Infrastructure in Latin America and the Caribbean: recent developments and key challenges*. World Bank-free PDF, 2007.
- Gakenheimer R (1999) Urban mobility in the developing world, *Transportation Research A*, **33**, 671-699.
- Giddings, 2002, *Environment, Economy and Society: Fitting them together into sustainable development*, Sustainable Development. 10, 187-196
- Goodchild, B. (1994). "Housing Design, Urban Form and Sustainable Development: reflections on the future residential landscape." *Town Planning Review* 65(2): 143-157.
- Hall, P. 2001. Sustainable cities or town cramming? In *Planning for a sustainable future*, edited by A. Layard, S. Davoudi, and S. Batty. London: Spon.
- Heileman, Sherry, and Leslie John Walling, eds. *Caribbean environment outlook*. UNEP/Earthprint, 2005.
- Hofstad, Hege. "Compact city development: High ideals and emerging practices." *European Journal of Spatial Development* (2012).
- Jaffe, Rivke. 2008. *The Caribbean City*. Netherlands: Ian Randle Publishers
- Jenks, M., K. Williams, and B. Burton, eds. 1996. *The compact city: A sustainable urban form?* London: Chapman and Hall.
- Lockhart DG, Drakakis-Smith D and Schembri J (1993) *The development process in Small Island Developing States*, Routledge, London.

- Mega, Voula. *Sustainable cities for the third millennium: The odyssey of urban excellence*. Springer, 2010.
- Meppen, Tony and Gill, Roderic. 1997. Planning for sustainability as a learning concept. *New England Ecological Economics Group, Centre for Water Policy Research, University of New England, Armidale, Australia*
- Mintz, S.1971. 'The Caribbean as a Socio-Cultural Area' in Michael Hoowitz (ed), *People and Cultures of the Caribbean: An Anthropological Reader*. New York, Natural History Press.
- Mitlin, Diana, and David Satterthwaite. "Chapter One Sustainable Development and Cities." *Sustainability: The Environment and Urbanization* (1996): 23.
- National Research Council. *Pathways to Urban Sustainability: Research and Development on Urban Systems*. Washington, DC: The National Academies Press, 2010.
- Nelson, A., J. Duncan, et al. (1995). *Growth Management: Principles and Practices*. Chicago, IL, Planners Press, American Planning Association.
- Neuman, Michael. "The compact city fallacy." *Journal of planning education and research* 25, no.1 (2005): 11-26.
- Palmié, Stephan, and Francisco A. Scarano, eds. *The Caribbean: A History of the Region and Its Peoples*. University of Chicago Press, 2013.
- Pelling M and Uitto JI (2001) Small Island Developing States: Natural disaster vulnerability and global change, *Environmental Hazards*, 3, 49-62.
- Portes, Alejandro, Carlos Dore-Cabral, and Patricia Landolt, eds. *The urban Caribbean: transition to the new global economy*. JHU Press, 1997.
- Potter, Robert B., ed. *Urbanization, planning, and development in the Caribbean*. Burns & Oates, 1989.
- Purvis, Martin, and Alan Grainger, eds. *Exploring sustainable development: Geographical perspectives*. Earthscan, 2004.
- Ramsawak, Rampersad & Umraw, Ralf. 2005. *Modules in Social Studies 4th Ed.*
- Rambarran, Jwala. 2013. Remarks by Mr Jwala, Governor of the Central Bank of Trinidad and Tobago, at the official launch of the Home Ownership Booklet "Opening the door to your own home – a guide to home ownership", Port of Spain, 30 April 2013. <http://www.bis.org/review/r130513c.pdf>
- Robinson, J. 2004. Squaring the Circle? Some thoughts on the idea of sustainable development. *Ecological Economics* 48 (2004) 369-384. Elsevier B. V.
- Satterthwaite, David. 2006. Editorial: Towards a real world understanding of less ecologically damaging patterns of urban development; *Environment and Urbanisation* 2006. Vol 18 (2): 267-273
- Scheurer, Jan. "Urban ecology, innovations in housing policy and the future of cities: towards sustainability in neighbourhood communities." PhD diss., Murdoch University, 2001.
- Simpson, M. C., Scott, D., Harrison, M., Silver, N., O'Keeffe, E., Harrison, S., et al. (2010) *Quantification and Magnitude of Losses and Damages Resulting from the Impacts of Climate Change: Modelling the Transformational Impacts and Costs of Sea Level Rise in the Caribbean*. Barbados: United Nations Development Programme.
- Song, Y., and G.-J. Knaap. 2004. Measuring urban form: Is Portland winning the war on sprawl? *Journal of the American Planning Association* 70 (2): 210-25.
- Spaargaren, Gert, and Bas Van Vliet. "Lifestyles, consumption and the environment: The ecological modernization of domestic consumption." *Environmental Politics* 9, no. 1 (2000): 50-76.
- Sturm, R. and D. Cohen (2004). "Suburban sprawl and physical and mental health." *Public Health Economics* 118: 488-496
- Thomas, L. And Cousins, W. 1996. A new compact city form: concepts in practice, in *The Compact City: A Sustainable Urban Form?* (eds M. Jenks, E. Burton and K. Williams), E & FN Spon.
- UNEP. 2001. <http://www.grida.no/publications/vg/lac/page/2737.aspx>. accessed 02/07/2013.
- UNEP. 2003. *Caribbean Environmental Outlook*. CARICOM.
- UN (United Nations). 2011b. *World Population Prospects: The 2010 Revision*. CD-ROM edition. Department of Economic and Social Affairs, Population Division, New York.
- UN-Habitat. (2002) Allen, Adriana, Nicholas You, Sonja Meijer, and Adrian Atkinson. *Sustainable urbanisation: Bridging the green and brown agendas*. UN-HABITAT, 2002.
- UN-Habitat. 2009. *Planning Sustainable Cities*. Global Report on Human Settlements.
- UN-Habitat. 2012. *State of Latin American and Caribbean Cities*.
- Wackernagel M, Rees W. 1996. *Our Ecological Footprint*. New Society Publishers: Gabriola Island, Canada
- Williams, K., E. Burton, and M. Jenks, eds. 2000. *Achieving sustainable urban form*. London: E. & F.N. Spon.

Mining, environment and society: Contribution of the thought of Whitehead to the methodology of assessing the water that can really be mobilized in the Kimberley and Canning Basin, Australia.

Summary of the presentation

The presentation will begin with a short film to take the audience directly into the region. The film will showcase the human, cultural, social, environmental and economic capital. These assets must be balanced when considering development in the region. The film will be followed by the presentation of a paper by the author. In application of the AIATSIS Research Charter (2011, ref. 01), Anne Poelina and Ian Perdrisat will be available to take questions.

Background to the case study: the research network

The main lines of research and case study chosen.

The location and local context (Maps)

§ 1 - Drop of experience n°1: teaching from Walmadany / James Price Point

§ 2 - Drop of experience n°2: What can we learn from this teaching for the Canning Basin (area concerned, Native Title, national consultation)?

§ 3 - Drop of experience n°3: good practices, a methodology IWRM in Canning Basin -

Need to take into account the intercultural issues; Multiculturalism;

Review of the scientific assumptions of Western culture

The contribution of the drop of experience method in Integrated Resource Management (IWRM / IWRM)

§ 4 - Drop of experience n°4: The proposed action

Conclusion: A contribution to the national debate regarding planning law reform to promote co-existence and co-management of Australia's sovereign land, waters and food security

We must hold this land all together for all of us (Paddy Roe, Nyikina Elder and Senior Lawman)

The "drops of experience", also termed "actual entities" are "the final real things of which the world is made up" (PR 27). "Like the atoms of Democritus they are microcosmic entities, aggregate of which, termed societies or nexus, form the macrocosmic entities of our everyday experience –tree, houses, people. But whereas the atoms of Democritus are inert, imperishable, material stuff, Whitehead's actual entities are vital, transient "drops of experience, complex and interdependent" (PR 28)." Donald W. Sherburne (1965, ref. 02)

Background to the case study: the research network

The impact of resource extraction on the social, cultural and environmental landscapes of the world are of international interest. The geographical Laboratory "Loterr" from the University of Lorraine (Nancy 2) is specialized in the study of landscapes, including mining landscapes across the world. Michel Deshaies, its director published in 2007 *Mining areas, exploitation and conquest*, and in 2013 *Natural resources and settlement* (Ref. 03).

This research contributes to ongoing training of the author who is committed, to exploring water issues, at the local level (City of Charleville-Mezières, France) and at international level (NGO-UNESCO International Forum to be held in Africa on the issue of water in 2014).

In the laboratory Loterr on 13 December 2008, the thesis (PhD) *Territorial experience enlightened by A.N. Whitehead Thought: Convivial regions' potentiality and applications to the region "between the Vosges and Ardennes"* (Ref. 04) was obtained. The concept of "conviviality" refers to the work of Ivan Illich (Ref. 05). This thesis questions the assumptions of geography, urban planning and wider the modern science, from the "hard core of common sense", i.e. "what everyone assumes in practice, even if it denies verbally" (Griffin, Ref. 06). This leads to the organic philosophy, and its evolutionary scheme. The most complete expression of the organic scheme was given by AN Whitehead in 1925 (Harvard University).

Other authors who have contributed to the development of organic philosophy include CS Peirce, W. James, Bergson, Teilhard de Chardin, Hartshorne, and closer, N. Rescher, D.R. Griffin, J.M. Breuvert, H. Vaillant, M. Weber, JC Dumoncel (Ref. 07). A.N. Whitehead uses the most demanding scientific criteria: logic, coherence, adequacy, applicability and necessity (Ref. 08) the "drops of experience" that formed the world (see below, § 4). Despite being created 80 years ago, Whitehead's approach remains unsurpassed to this day. His approach is grounded on a trans-disciplinary and generalist approach to sustainable development and include an alternative economy that respects territory. Concerning water, we will show how it can effectively expand and deepen the methodology of IWRM proposed by UNESCO (ref. 09). This methodology allows the research process to be action oriented.

During a trip to Australia in the summer of 2011, the Nyikina people, through one of their leaders Anne Poelina expressed interest in the organic approach to understanding and managing local and regional geography. A dialogue was born, to put organic thought into action. (ref. 10)

The dialogue continued on 1 June 2013 in France with a presentation to the NGO-UNESCO Joint Commission on Human Rights on the situation of the Kimberley Region in regards to the proposed establishment of the world's largest gas hub at Walmadany-James Price Point (abbrev. JPP), with a very strong pressure for intensive mining (more than 500 exploration licenses to date) Following which several conferences in France in June 2012 in Vienna, Metz, Lyon, the Forum of the Association " Men Women in the City "(Brainville, Haute-Marne), and the University of Nancy 2. A meeting with M. Deshaies gave rise to the project for a post-doctoral research programme for one year in 2013-2014, included in a five year research programme from 2013 to 2018 with the Laboratory Loterr.

An international partnership is being initiated with the International Water Centre (IWC). The research is also linked up with the Institute of Social Territorial Dialogue in Poitiers, which made the "drop of experience" the basis of its pedagogical approach (Braconnier, ref. 11). The case study of the Kimberley / Canning Basin could also be a contribution to the Franco-Australian Forum which has initiated a research programme on "Water, Land and Food security" (ref. 12).

The programme focuses on mining companies and sustainable development centred on the theme of "Water Source of Life".

A basic principle of the programme, in accordance with the AIATSIS Charter for joint scientific research will be a partnership agreement between the University of Lorraine, IWC and Nyikina people (ref. 01). This programme is also be integrated into the ISOCARP consultative membership to UNESCO-Liaison Committee, and is linked up with UNESCO-LC - Africa Forum water research in 2014.

The main lines of research and case study chosen.

Indigenous peoples have often lived in their territories for thousands of years, even tens of thousands of years, as is the situation for Nyikina people of Mardoowarra-Fitzroy River. Nyikina people identify themselves as yimardoowarra, meaning "*people who belong to the Mardoowarra: the lower region of the Fitzroy River*" (Poelina & Perdrisat, McDuffie, ref. 10). The river sustains their life and is central to their culture and heritage. They know and have practiced coexistence and balance between society, culture and the environment over a long period of time. They coexist with birds, snakes, animals, nature, an approach that is not individual, but community life. The important issue for today to share and teach the multi-millennial living experience, not only for Australia but for the world. Indigenous peoples represent 300 million people worldwide, and they have about 24% of the land, on which they live in harmony. Nyikina people, like almost all indigenous people, is peaceful, non-violent, "protectors" of the environment and not simply "protestors" to industrial development, "actionists" and not "activists", i.e. eager to act and to participate in decisions, and not just "talk". Dialogue and the action must be "clearly informed" by evidence.

The federal and state/territory governments do not recognize the sovereign rights of Indigenous Australians over their lands (ref. 13). Without the right to veto destructive industries on their land, indigenous lands are effectively "available" to increasing pressures from strong multinational mining corporations. An operational framework for engagement is

required to promote dialogue and to involve local populations in decision, in order to reduce and manage conflicts that may arise. It is important to be open and honest about the risk and effects of pollution and destruction of the territories. In the territories, the water is known to be a finite resource, limited, and the calculation of water really available should be included in any project feasibility study.

The question is how to achieve a different industrial or mining development in a process of dialogue and action to create participatory planning and informed decision making for a better humanity. This case study provides the basis for such an approach, with a view to contributing to the Australian national debate on the renewal of planning.

The location and local context

The West Kimberley region of Western Australia is considered one of the last great wildernesses of the world. Vast areas of the region were National Heritage Listed in 2011 for multiple world values containing the world's largest footprints and most complex dinosaur trackway, ancient rock art, pristine coast lines, rich ecosystems, and unique living Aboriginal cultures co-existing with Asian and European heritage. Many Indigenous peoples from around the world share the view that land, water and people are intrinsically entwined.

Figure 1: Map of Australia and the situation of the Kimberley (450 000 km²) and Canning Basin (approximately 500,000 km²) in northern Pilbara.



The territory has seen a similar size to France and Germany combined.

Figure 2: Left : roads ; Right : Catchment of Fitzroy River (93 829 km², 733 km, average 2 400 m³/s, discharge 84 760 m³/s) which is the size of the Rhone (96 000 km², 812 km, average 1 690 m³/s).

Others :

- Negro River, Argentine (102 000 km², 550 km, average 762 m³/s)
- Pô River, Italy (71 057 km², 652 km, average 1 500 m³/s)
- Sanaga River, Cameroon, (129 219 km², 918 km, average 2 072 m³/s)
- Rhine, Swiss, France, Germany, Netherland (1233km, 185 000 km², average 2 300 m³/s, max. 12 900 m³/s 1926)

Source data and left map Wikipedia . Right map : Government of WA Department of environment



In Western Australian (WA) the government has singlemindedly promoted industrial development without demonstrating responsible engagement with regional WA. I shared a

criticism of the WA Premiers autocratic decision making process in September 2011 with the Australian planners ISOCARP. A planner quoted to me the legality of pre-industrial work and an agreement of the Aboriginal Traditional Owners in October 2011. In November 2011, the agreement was invalidated by the Western Australia's Supreme Court of Justice (ref. 14a) ... This and other examples particularly from the families of Broome who gathered together to show that there is a need to engage participatory planning. There needs to be an operational framework for engagement to establish regional governance mechanisms. Responsible and representative regional governance needs to include a wide and diverse range of views regarding how the Kimberley is to be developed now, for current and future generations. Contemporary industrialisation plans for the Kimberley are not grounded in responsible planning methods based on good science or industry best practice evidence; planning is being determined primarily for a political and economic interest.

Figure 3 (above): Left: Map of indigenous peoples affected by this territory. Source : AIATSIS, 1994, (ref.14b); Right: The area affected by mining and shale gas. Green : protected areas. Brown : the mining exploration licenses and dark pink gas exploitation (Mineral, oil and gaz leases, claims and licences cover 76% or 1,2 million hectares of the rivers, wetlands and floodplains of the Kimberley) Source : Environs Kimberley (<http://www.environskimberley.org.au/>)

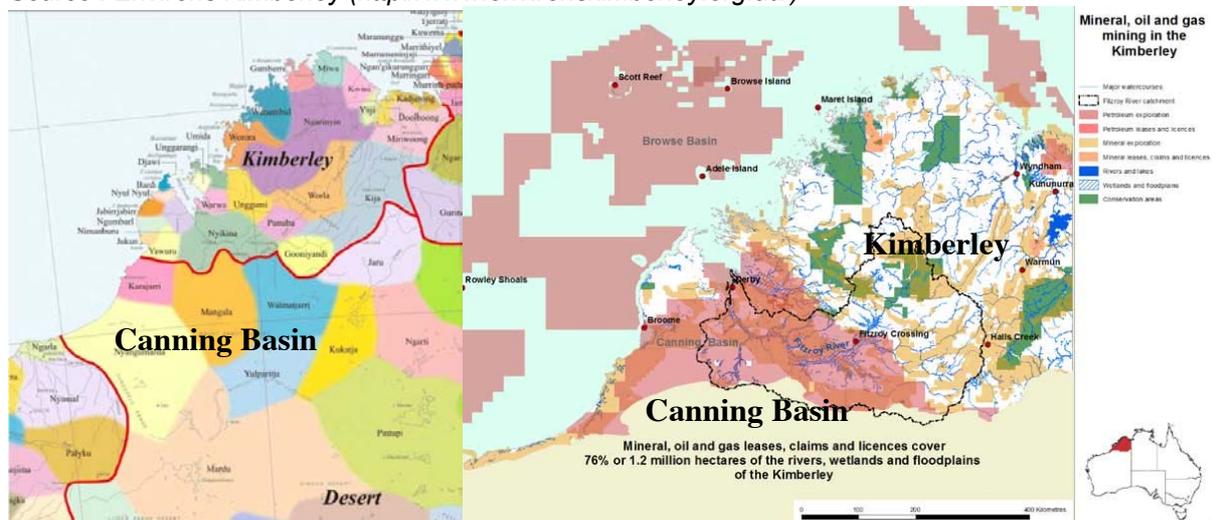
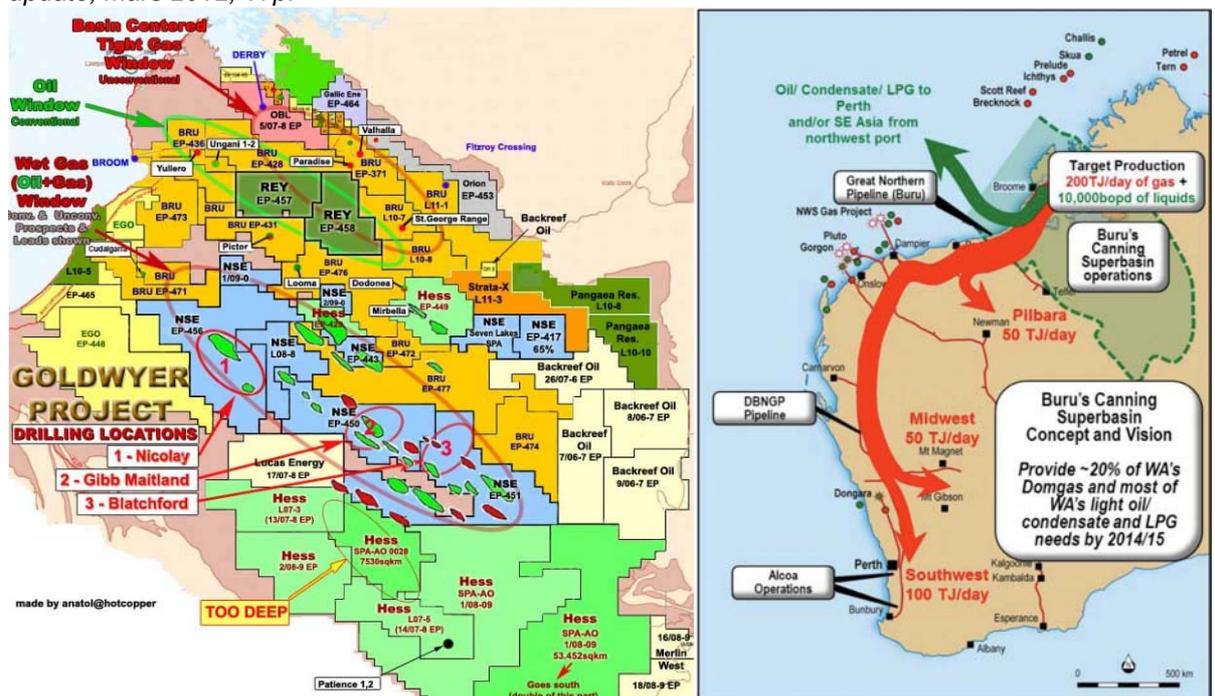


Figure 4 (above): Right : Map of exploration licences Source Hotcopper, ref.14c). Left : gas exploration license granted to date. Right « Buru has a focused and well developed business plan that is being successfully executed by bringing resources into production » : Source : Buru Energy, Corporate update, mars 2012, 17p.



The Native Title Act (1993) created laws that effectively create conflict, manipulation and division within and outside of Indigenous Native Title Claim groups (ref. 15). Australia's Native Title law cannot stop mining because there is no capacity for Indigenous Traditional Owners to veto destructive industry on their ancestral lands. It only gives Traditional Owners a right to negotiate with resource extraction companies. The United Nations states indigenous people need to give « Free, Prior and Informed Consent » before extraction can take place. Native Title law has become an instrument of oppression as Aboriginal people are forced into signing mining agreements before all of the science, heritage and industry knowledge is gathered and evaluated. State and national mining approvals ignore traditional knowledge, science and industry best practice. Governments are weakening environmental laws and regulations; annexing land from local government and disregarding international obligations to all Kimberley people (ref. 16).

Australia has a two tiered environmental assessment process. Each state/territory has an Environmental Protection Authority (EPA) legislation and the federal government has the Environmental Protection and Biodiversity Conservation Act (1999, EPBC Act). There has been a great deal of pressure on the federal government from extractive industries to 'remove the green tape' by removing the EPBC Act and leaving the state EPA's as the single environment assessment process. The state EPA assessment process for the multi-corporation LNG processing hub proposed for Walmadany-JPP north of Broome demonstrated political influence created sufficient flaws in the process resulting in a loss of community confidence in the EPA's credibility and independence (ref. 17).

This paper advocates a new way of doing business around integrated management of land, water and food security in the Kimberley region of Western Australia. People in the region are looking for a co-operative way to develop northern Australia's multiple economies from a wide body of information and world views (Crough, & Christophersen, 1993, ref. 18). The inclusion of Indigenous views is required to provide genuine participation in the process in order to overcome the colonial paradigm that has shaped the region's development.

Indigenous Australians have been trustees from the beginning of time, guardians of Australian land, waters and natural resources for current and future generations. The United Nations Charter of Human Rights promotes the wellbeing and sacredness of all life not just human life (ref. 16). Australians need to think carefully about engaging in the destruction of Australian lands and waters and surrendering food security. Together, we must recognise and protect all inhabitants who are connected to these living water systems.

The report on the water for the Kimberley and the Canning Basin in 2013, entitled "Regional Kimberley water level from 2010 to 2030" written by the Water Department of the Western Australian Government is particularly incomplete in relation to forecasting the water needs of the industrial sector, as can be seen in the following two chapters: the lack of presentation of the needs assessment for water for the Gas Hub James Price Point, and no comment on the water needs of Canning Basin (ref.19). The strategic objectives are generous and ambitious, however there is uncertainty regarding the implementation process.

Australia has developed an integrated water management plan for the Murray-Darling basin due to public concern over the scarcity of water, drying wetland areas, salinization. Furthermore biodiversity at risk with fauna now less than 10% of the situation before colonization. The centralised technocratic approach of the Murray-Darling Basin Authority (MDBA) with minimal level of interactive engagement with stakeholders is inappropriate (K.A. Daniell, ref. 20). The calculation of really available water has to be reviewed three times in a century, each time in a downward trend. The responsible governance of water is of great importance to take regular measurements, to inform decision making so that water use can be adjusted to protect the environment. Why has this device not been developed for other watersheds BEFORE the ecological disasters? Barriers to stakeholder engagement and collaborative approaches have to be analysed to prevent their rejection for wrong reasons (Barreteau, ref. 21)

§ 1 - Drops of Experience n°01 : teaching from Walmadany-James Price Point

The WA Government decision to select Walmadany-James Price Point for the site of the world's largest liquefied natural gas (LNG) processing facility generated competing waves of

human energy to promote or resist the projects development. These drops of experience inform future actions particularly in relations to planning. The Walmadany-JPP experience has demonstrated the need to widen community involvement through participatory planning including citizen science in regards to considering the development of resource extraction of the Super Canning Basin and the Fitzroy River catchment. There needs to be investment into generating the body of evidence from the Walmadany-JPP experience and transferring that knowledge into a regional Kimberley land, water and food security governance model. The focus is to build the knowledge base from multiples sources to establish an operational framework for engagement to enable the people of the Kimberley to fully participate in determining what is best for their region, whilst simultaneously contributing to the national growth and development.

State Planning reform is of particular interest as the WA Premier has used parliamentary powers to enact new laws and agreements to protect the rights of corporations and multi-national resource extraction companies over the rights of ordinary Australians (ref. 22). Planning laws and policies have seen state rights over ride local government rights. The State Government is excising Crown Land out of the Local government planning jurisdiction however; local governments are expected to regulate planning and development conditions without the investment to ensure standards and compliance of large scale projects are maintained. Projects between 3 – 7 million dollars bypass local government assessment processes and are assessed by an independent Development Assessment Panel that has been appointed by the Premier. Furthermore the WA Environmental Protection Authority (EPA) was subject to legal challenge in the Supreme Court by the Wilderness Society to make transparent the structural and systemic processes that approved the development of Walmadany-James Price Point.

The WA Aboriginal Heritage Act (1972, ref. 23) is supposed to protect Aboriginal heritage for all West Australians, however in the case of the Walmadany-JPP the Aboriginal Cultural Material Committee (ACMC) took public submissions. These submissions clearly demonstrated the rich living culture heritage values of the Walmadany-JPP site over many decades. All of this information was ignored by the Minister for Aboriginal Affairs who supported Woodside Pty Ltd plans to clear endangered ecological communities and dig amongst sensitive Aboriginal registered and unregistered cultural and burial sites.

Robin Chapple MLC Member for Mining and Pastoral Region questioned the Minister for Aboriginal Affairs who admitted that “there are currently a massive 6,234 lodged Aboriginal heritage sites awaiting assessment by the ACMC (ref.24). According to the Department of Aboriginal Affairs latest annual report, the ACMC has been working for 40 years, and there are approximately 15,000 registered sites with another 15,000+ heritage “places” – so a charitable view would be 30,000 assessments over 40 years – equals about 800 assessments per year. At that rate, the admitted backlog of over 6,000 sites will take around 8 years to clear! “If we allow that they can also consider site assessments at the same rate – the backlog now looks more like 40 years! Mining companies are equally frustrated by the lack of certainty which results from not knowing what sites are in areas where they are looking to develop projects”, according to Mr Chapple.

The decision by Woodside and its joint venture partners to extract and process gas from the Browse Basin off the West Kimberley coast by a floating LNG processing plant out in the middle of the Indian Ocean is an example of maximising profits by shifting to the world’s best practice. Moving to Floating LNG shows Australia’s capacity to embrace cutting edge technology without the destruction of ancient living Indigenous cultures and the environment.

The development of Walmadany-JPP as the largest liquefied natural gas plant in the world is now a dirty handkerchief, no company wants to touch it. It’s now time to leave its cultural and environmental heritage values intact, leave its precious environment in pristine condition and avoid any further community unrest and division by rescinding the Browse (Land) Agreement Act (2012, ref.25). This way the Kimberley can be saved for sustainable development and for future generations of Australia and the world to enjoy. The West Australian Premier Barnett, has confirmed that the jetty proposed for Walmadany-James Price Point was the hidden agenda for the industrialisation of the Kimberley. The passage of the Western Australian Natural Gas (Canning Basin Joint Venture) Agreement Bill 2012 state (Bill No.

324, ref. 26) agreement over the Canning Basin has provided the Premier with renewed obsession with an onshore gas hub in the Kimberley regardless of the relative merits of any associated project.

§ 2 - Drop of experience No. 2: What can we learn from this teaching for the Canning Basin (area concerned, Native Title, national consultation)?

The development and subsequent temporary abandonment of the proposed Walmadany-James Price Point gas hub has distracted attention from a much larger and riskier series of industrial projects. There has been little media coverage of the exploration of shale/tight gas in the Canning Basin: a systematic exploitation of a shale gas project estimated the volume of gas to be about 400 tcf-trillion cubic feet or 11,200 km³ or GM³- on 550 000 km² in the Canning basin (which covers the northern part of the basin downstream of the Fitzroy River) see map above about exploration licenses- (Buru Energy, ref. 27).

Since 2010 companies such as Oil Basins Ltd., and now Buru Energy and Rey Resources have undertaken exploration and fracking of the savannah rangelands and river country east of Broome and are considering transporting unconventional shale and tight gas 170 kms to Walmadany -JPP. The mighty Mardoowarra-Fitzroy River is one of the world's last great wild rivers. However, from the catchment to the coast it is covered by mining and gas fracking exploration tenements. The proposed Duchess Paradise thermal coal mine would be the first mine in an 8000km² coal mining province and there are plans to mine uranium and other rare mineral sands. These types of developments risk poisoning and depleting the Canning Basin groundwater and contaminating the Mardoowarra-Fitzroy River and everything that lives in and off that water (see ref. 10).

The Kimberley is at a critical point where some of the proposed developments present a real threat to the land, water and food security as well as the unique way of life. Many people in the region are not anti-development rather they are anti-unethical development and share a particular concern for the notion of development at any cost. The mining and fracking laws are extremely unfair and do not reflect the values of the Kimberley region. There is no opportunity to consider the 'facts' about the real impacts of resource extraction, processing and transporting methods. Transparent participatory planning is needed to support an operational framework of engagement to reveal the real impacts of each resource extraction project and the cumulative effect of all of the industries proposed for the West Kimberley.

There are generous government incentives for investment in the resources industries to create employment. Similar levels of government investment and tax concessions into exploiting the natural resources that the Kimberley already has in culture and conservation would create jobs, research and investment.

§ 3 - Drop of experience No. 3: good practices, a methodology IWRM in Canning Basin

Intercultural issues

Modern Australia was established on a brutal history of conquest, annexation and colonial occupation of Indigenous lands, waters and liberty. In a little over two hundred years the Aboriginal population has been reduced from around two million to about 410 000 (2% of the Australian population) (ref. 28). Contemporary colonisation speaks the language of global trade agreements, international need for resources and multi-national corporate investor rights. The impact is still as it has always been; private industry and government working together to remove Indigenous people from their land, lifestyle and spiritual connection. Colonisation is a conflict paradigm which continues to raise intercultural issues in Australia.

This issue is particularly important for this presentation today at the 49th Congress of the ISOCARP. Aboriginal culture is closely linked to the land, plants and animals, and the stars. Aboriginal culture disconnected from land losses meaning (Preaud, 2009, ref.29). "There" (Berque 2000, ref. 30) sense to territory, "here and now". It is the loss of meaning that causes degradation of the lives of Aboriginal peoples: abuse, addiction, dislocation, imprisonment (30% of the prison population ...Indigenous Disadvantage Report) (ref 31).

Abstractions of globalization are here confronted with a unique territory, singular, specific, particular. It was as late as 1992 that Eddie Koiki Mabo won an appeal to the High Court of Australia to overturn the theory of Terra Nullius that maintained the legal fiction that

Indigenous Australians were not connected to their land (ref. 32). The deeds of possession are in Indigenous culture: relationships, dreaming stories and songs, paintings, rituals, dances and land management.

Resource extraction corporations can avoid confrontation by negotiating an agreement with Traditional Owners under the Native Title Act (1993). Legality may obscure the legitimacy, as Indigenous people often feel compelled/ coerced into making mining agreements because of the short timeframe, lack of recognition of their rights and no power for Traditional Owners to veto destructive development on their land.

In order to engage Indigenous people there needs to be an intercultural participation process that is permanent, scalable, regular, and can be formalized by the IWRM model of UNESCO in support of sharing the cultural diversity, science and education of all peoples of the world (ref. 09). This model seeks to articulate, deconstruct and resolve confrontation between different interests, and different cultures in regard to their scientific assumptions, cosmological, culture and spirituality.

This necessarily requires us to consider these assumptions to lay the scientific and philosophical bases of intercultural dialogue, an approach that respects the Charter of AIATSIS and work of Turiha Smith "Decolonizing Our Methodologies" (ref. 32). These databases allow you to see the IWRM process in a new light, and ground participatory planning proposals that contribute to the debate on how local, state and federal governments maintain water, land and food security.

Review of the scientific assumptions of Western culture

This review is essential to allow, perhaps, an intercultural dialogue on a common basis, in accordance with the differences.

Who can doubt that the philosophical and scientific roots of our Western science comes from Aristotle, Plato and Leibniz, Descartes, Hume, Locke, and Kant ? In the book *Process and Reality; An essay in cosmology* (see ref. 01a), A.N. Whitehead a career mathematician and physicist undertook a critical review of Western science and synthesised the most advanced science in terms of "philosophy of organic science".

This work is eighty years old but it remains relevant today because it incorporates reflection of quantum mechanics, and scientific verification of quantum assumptions. The famous EPR paradoxe (Einstein-Podolsky-Rosen) has been established so truly essential that it has been recognized by the International scientific community in 2002 by the work of Bernard Aspect (ref. 34). Science also has its slowness ... This slowness of science, and the recent work calls the organic scheme in the more immediate present, as evidenced by the growing number of works from the New Covenant I. Stengers and I. Prigogyne, Nobel Price (ref. 35).

The organic scheme respects the Redstone Declaration of Indigenous Peoples (ref. 36): interrelationship between all the elements of Nature, ... Planners who signed the Charter of the Town Planning for the twenty-first century of the SFU Europe will also find themselves their new principles.

The organic scheme meets the most rigorous scientific criteria: logical coherence, adequacy, applicability and necessity (see ref. 6). In summary, in place of the subjectivist principle of Descartes takes place a reformed subjectivist principle, whose final expression by Griffin after 30 years of research could be the pivot of the new scientific paradigm (ref. 37). On this renewed basis, materialism is henceforth not scientific (it does not respect the coherence and facts), dualism is replaced by a duality without dichotomy. Dichotomies become contrasts: the aesthetic, architectural and urban vocabulary of the Renaissance is now integrated in the organic scheme, both philosophical and scientific. The concept of substance is no longer the transition between two of the "drops of experience" which has formed the world (see figure XX below).

The geographer Eric Dardel refers to Whitehead (ref.38). The geographer Augustin Berque describes "moments of existence" that all have their resonance with the "drops of experience" (Ref 31). These organic groups are categories of feeling, and renew the categories of thought of Aristotle and Kant. These categories are listed by Gilles Deleuze (ref. 39), Stengers and Ilya Prigogyne (ref. 35).

The organic approach is the basis for a growing number of jobs in all areas of aesthetics, anthropology, ecology, economics, education, ethics, history, metaphysics, psychology, public policy, sociology, theology, theories of knowledge, and finally: urbanism and architecture. (ref. 40). For urban planning and geography, the work of Joseph Grange deserves dissemination and implementation debate, yet this remains to be done (ref. 41).

Openness to all disciplines also means opening the songs, dances, rituals and symbols of indigenous peoples, and for this study, the Nyikina people. In an experience-based approach, the "drops of experience" cannot be limited to disciplinary segregation. The organic scheme provides an opportunity for indigenous cultures innovative, open, scalable scientific expression. The recognition of internal relations, the removal of the distinction between subject and object open the possibility of a base of intercultural dialogue and the development of a tool, where the ontological and cosmological foundations are explained.

In this approach, this vision, Western science and Indigenous knowledge work collaboratively (Bohensky, Mahu, 2011, ref. 42). The asymmetry highlighted by Bruno Latour between ethnography "others" and the Western culture disappears: we are equally exotic to indigenous peoples (Latour, Rist, ref. 43). There are only men and women who have to organize the same territory. Sustainable development is driven by the drop of experience and advanced in a "spiral", as we will show below.

Clearly, the categories of organic scheme are classes of feeling and not only of thought, which means that every part of the experience has a combination of sensory information. The second phase operates abstraction from experience, i.e. the "imaginative generalization" that allows the emergence of the third stage of new proposals. At the end of the fourth phase of decision, the winning proposal "happens in the real," "is a new reality." These new realities are offered in the fifth phase of new transformations.

It is all of these phases as "drops of experience" or "seed of thought" (Teilhard de Chardin, ref. 44), or even monads (Berque, Tarde ref. 45). The technical term is "current entity" or "quantum discount" (Ref. 8, PRX, AN Whitehead). The pattern resulting from gout experience is as follows:

It is possible to develop a simple approach to sustainable development around the theme of water, set in motion by the "drop of experience." What is it? The "Drop of experience" is the essential process for any action of each person in their daily or professional life or professional, the simplest action the wisest. This is what each of us does "in practice". In practice, every action takes place in five stages or phases:

a - A stage of apprehension, **a**nalysis or "**a**udit" allows to manage a network of **a**ctors, and their interactions. The question is "Who are we ?". This generally leads to a diagnosis and "inventory" This is also a good first step in our approach. Going further, what is it?

b – (in French: "**b**ut" = aim) A stage of vision. It means to have a goal, a vision, a purpose, namely, "where are we going ?" or "what can we expect ?". These are signs / buoys that can guide us, as in mountains, on the sea, or in the sky. Sometimes referred to as purpose but the notion of purpose is ambiguous: there are long-term purposes (the headlights of a car), or short-term (the sidelights on a car). In the long run, those are the goals, vision. In the short term, it is proposed the next step.

C – A stage of proposition. This is the stage of development of **C**ollaborative proposals. These proposals **C**oordinate information in the sense of vision, and require strong **C**ooperation to finalize these proposals. The question is "what can we do ?" The transition from vision to strategy is proposed: it is in fact trying to achieve the vision taking into account the real state of the place, to adjust possible solutions. These proposals may form a programme. But what about all the proposals that emerge?

d – A stage of decision. The **d**ecision allows to achieve a particular proposal, to **d**etermine which will be implemented, to make a judgment in a **d**ecision process. The question is "What do we do ?"

e – A stage of commitment. The last step is the commitment of the action and its **e**valuation. The question is: "what have we done ?".

Each human group has his own expressions for the five stages. You can see I have proposed several for each above stage. The terms may change, but the steps are essential because a project, whatever it is, will be poor if there is no vision, ineffective without good proposal inadequate if not starting from a good inventory (and ultimately equally ineffective), wavering if not a good decision-making, and aborted if not a concrete commitment, implementation.

The simplest, example shows that it is applicable to any situation in ordinary life: when a housewife prepares a meal **(a)**. She receives friends, and dreams of a convivial meal **(b)**. The menu suggestions depend on the state of the refrigerator and the usability of its reserves **(c)**. However the availability or not of other items in the stores will quickly influence decisions that will alter initial proposals **(d)**. Then she starts preparing dishes, and guests are responsible for the evaluation, keeping in view the satisfaction of all **(e)** ...

From there, the examples can be more professional, more scientific, more members. I want to make the point that a drop may experience scientific extensions (its scientific name may be "quantum discount" or current entity) but also philosophical (systemic philosophy / or organic philosophy of the process) and even cosmological (approach micro / macro, ontology underlying ...) It can account for the diversity of cultures because it freezes nothing, and in this sense this approach is "universal." If that is not taken into account, then you must change it. It is flexible and scalable.

Therefore, it is not surprising that many operational approaches seem to have many practical applications such as the development of local Bernard Vachon, territorial governance of the Foundation for Human Progress, the tool educational association Men Women in the City, Patrice Braconnier PhD (Vaillant, PhD, ref. 04).

The contribution of the drop experience in Integrated Water Resource Management (IWRM)

United Nations –Word Water Assessment Programme, in collaboration with UNESCO –Hydrological Programme wrote in 2006 a specific method to solve water problems all around the world, called International Water Resource Management (IWRM, see ref. 09). Water is in close link with the living culture of people, and no success can be reached without taking in account of these lived experiences, these feelings.

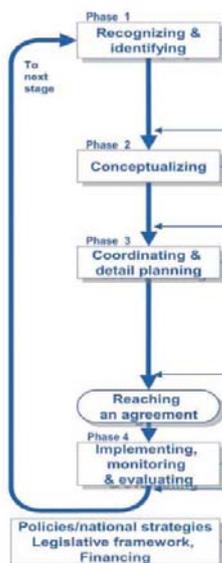


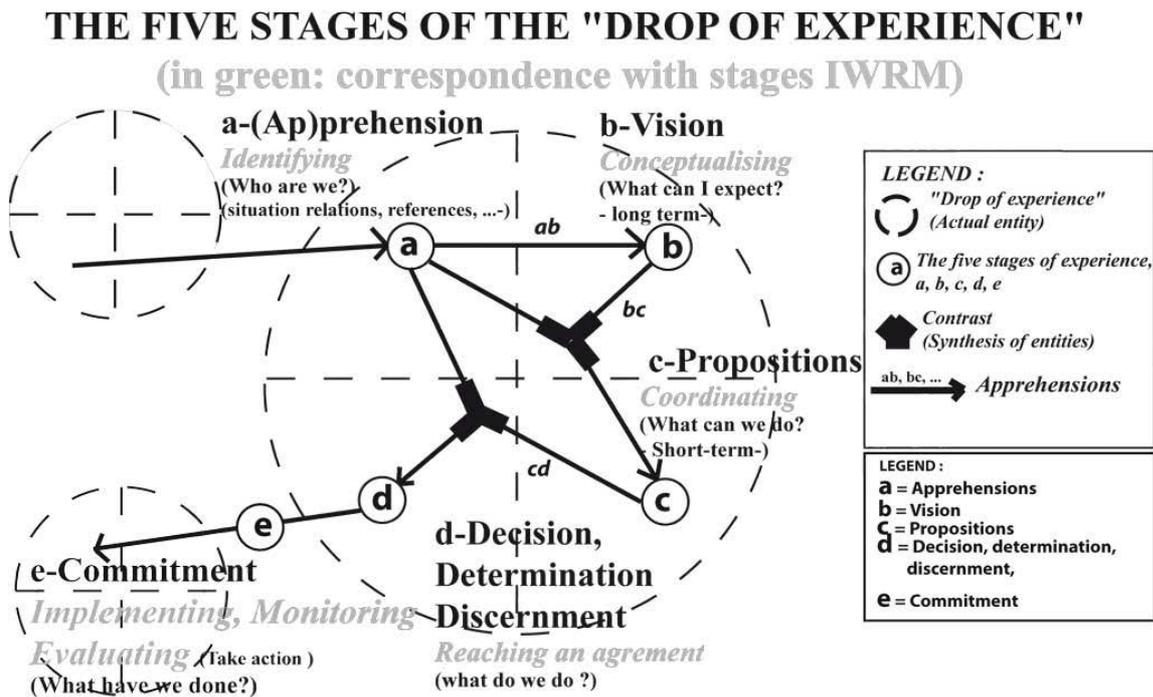
Figure 5 : IWRM Process See Ref. 09, Part 2.1: Features and Structure of "the Guidelines for IWRM Coordination"

In the left diagram , it is possible to compare the phase to phase "drop of experience" and the IWRM process to observe that IWRM is a "drop full experience", with technical oriented formulation "project".

The purpose of the organic approach is to provide an ontological, metaphysical and scientific basis for both the IWRM plan. A less technical formulation appears possible, even desirable for IWRM becomes universal, "unity in diversity", and in connection with all scientific approaches of different disciplines mentioned above. **The organic thought gives its full depth to the expression of values in integrated intercultural approach to northern Australian water planning and development that takes into account traditional knowledge, rights and interests.**

When we compare term by term phases of the "drop of experience" and phases of IWRM, we see ther is synergy in each phase. The diagram of the drop of experience with the phases of IWRM can then be as following

Figure 6 : FINDINGS 1 : the drop of experience with the link with IWRM (UNESCO/IHP – UN / WWAP)



Integrated water management is a spiral movement in time: the cycle consists of several phases that to lead to a decision, approval, or implementation of actions. Below is the schematic diagram of the spiral and its application to Murray-Darling integrated water management.

Figure 7 : IWRM Spiral Source: UNESCO/IHP & UN / WWAP IWRM Guidelines at River Basin Level , Part 2-1, page 3 ; Right: IWRM spiral of Murray-Darling River (page 107)

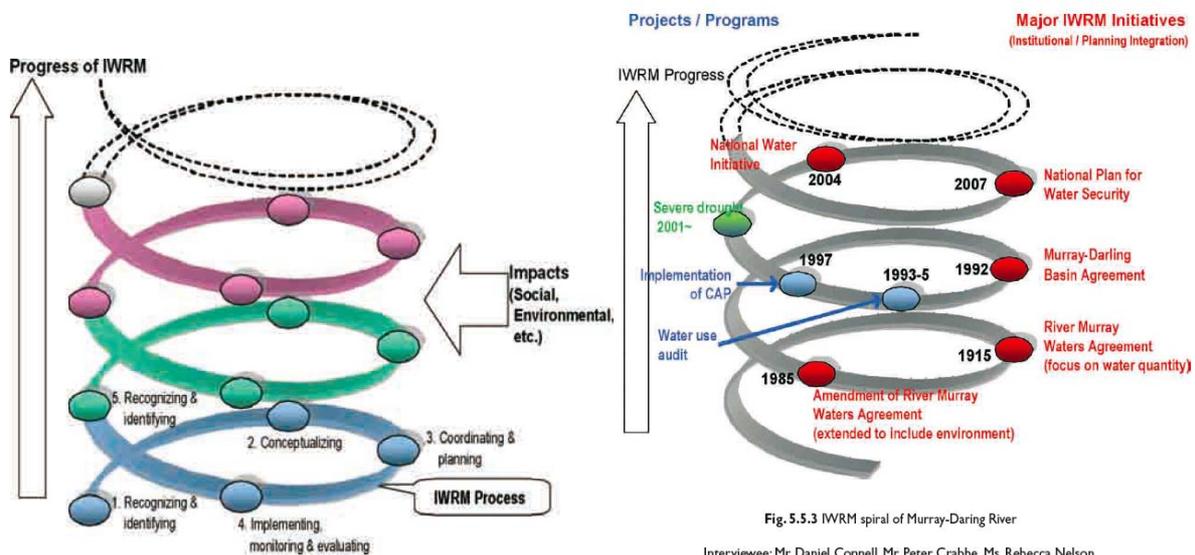


Fig 4.1 Spiral evolution of IWRM

Fig. 5.5.3 IWRM spiral of Murray-Darling River

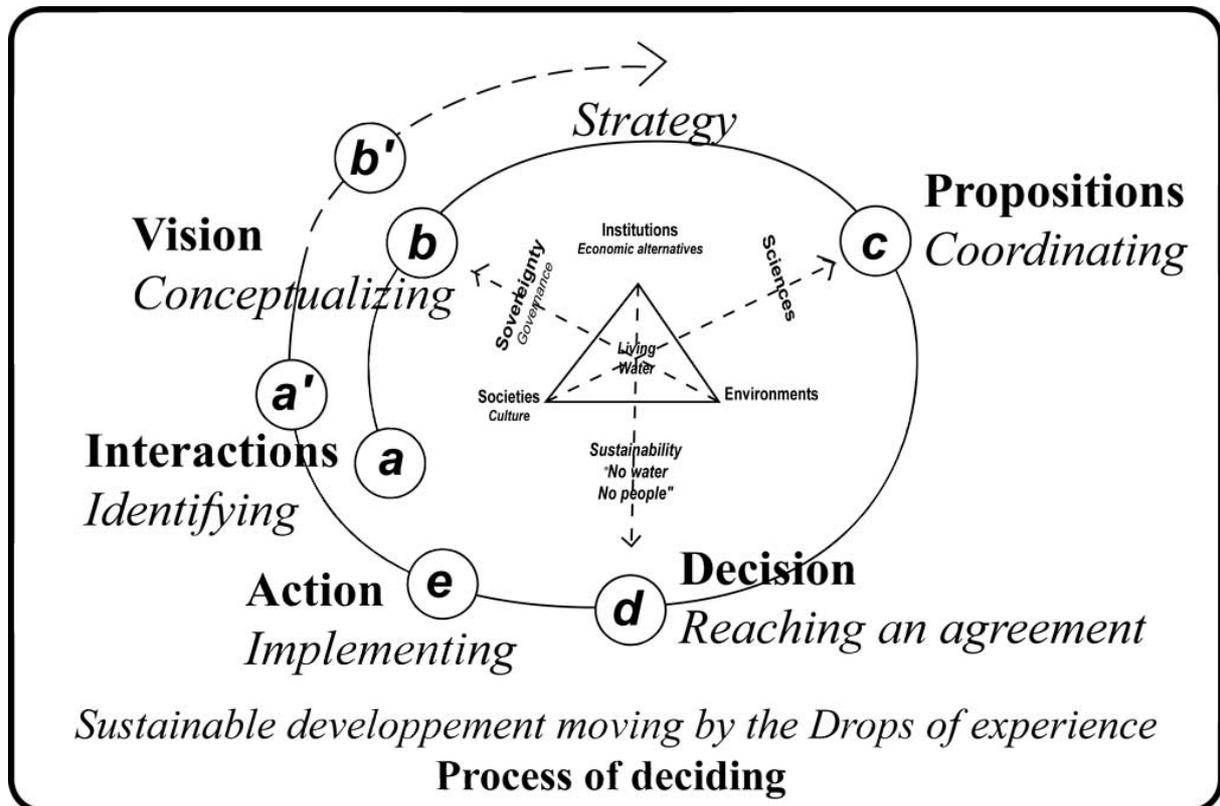
Interviewee: Mr. Daniel Connell, Mr. Peter Crabbe, Ms. Rebecca Nelson (Murray Darling Basin Authority)
 [Interviewer: Junko Sagara (CTI Engineering)]
 [Report: Prof. Anthony Jakeman (Member of the Steering Committee), Ms. Serena Chen (Australian National University), Mr. Junko Sagara (CTI Engineering)]

In this approach, there is more to obtaining indigenous peoples "approval" under (Native Title) law as information would need to be + - complete. It's about working together permanently, from local communities, the state, to federal government throughout in common and intercultural process, with measures, following up common criteria, the definition of successive goals, adjustments.

The heart of this case study is the expression of this method of consultation to experiment in the Canning Basin first, then all the Kimberley. This is a proposal, which starts from an observation, which is guided by a vision.

It is now possible to provide a comprehensive scheme of sustainable development, moving by the drop of experience in terms of the integrated management of water resource. This scheme, developed for taking action is the following:

Figure 8 : FINDINGS 2 : Sustainable development moving by the drop of experience



§ 4 - Drop of experience n° 4: The proposed action

The proposed action can be developed by grouping the actions according to the five stages.

4.a - Apprehension / Recognizing & Identifying

- **The proposed action can be developed by grouping together the actions according to the 5 stages**

- Stakeholders participation: proactive disclosure of information for facilitating coordination and negotiation among stakeholders reaching agreement on a plan.
- Identify potential priority areas.
- Inventory of initiatives already completed or in progress (TRaCK, Kimberley Water Plan, Kimberley Land Council, Broome Development Plan 2030, PhD in process, University engaged)
- Roughly estimate the available amount of water in the rivers basins and the extend of water use. If the basin water resources are used (previously) extensively, study in detail the natural or original capacity of the basin. Determine the water budget in the basin.
- Accounting for social, economic, and environmental needs and the demands and requests of various sectors, and future forecasts.
- Enhancing public awareness. (show various combinations of problems and solutions)
- Be selective when collecting data by setting priorities based on the problems
- Always keep eyes, ears and mind focused on the real situation in the field
- At this stage, recognize the necessity of IWRM process.

4.b – Vision / Conceptualizing

- Develop the capacity of a leader who can recognize problems, find necessary solutions, and implement them.
- Conduct interviews with relevant people/sectors can prove effective.
- Prepare an institutional framework to aggregate experience and traditional indigenous knowledge

- Harmonize related plans including those from outside the water sector (enlighten the hidden agenda, obtain full information for future full consent, ...)
- Take into account the appropriate balance among water-related sectors in the whole basin.

4.c - Proposals collaborative / coordination & detail planning

- Prepare multiple options which may be acceptable to stakeholders.
- Prepare a framework for stakeholders participation to build consensus among stakeholders
- Coordinate in such a way so that the resulting changes will be favourable for an equitable relationship among stakeholders. (in the event that the coordination process show no sign of reaching an agreement, return to the previous process and review the propositions as necessary).
- Consider ways, including policy interventions, to secure water supplies during extreme events.

4.d - Decision process / Reaching an agreement

- Determine the cost allocation acceptable to all stakeholders by ensuring that it is justifiable.
- Develop infrastructure with an eye to long term sustainability
- Continuously collect necessary data and share among stakeholders

4.e - Commitment to action / Implementing, Monitoring & evaluating.

- Continuously monitor and evaluate the effectiveness of IWRM activities (plans, projects, infrastructures, legal framework, organization, etc ...)in the basin.

This process can be renewed over the years.

In conclusion:

This case study is only the beginning of a process of research and action. It seeks to articulate the assumptions of research, required for integrated management that are transferable to any other part of the world water methodology.

Due to remoteness, hot tropics and arid deserts northern Australia has not experienced the intensity of colonial impost as the south. Many Australians view the north as wild wasteland that can be manipulated by technology for agriculture or resource extraction. Lurking deep within these ancient lands are mining corporations' extractive dreams: coal, uranium, bauxite, copper, iron ore, coal seam and shale/tight gas, diamonds, and other precious metals. The vast number and magnitude of potential resource projects is placing the region under overwhelming social, cultural and environmental pressure. Despite the attractive presentations on the mining companies' websites, mining often leads to the loss of connection to the land and of social ties for indigenous peoples (Hill et al, 2006, ref. 47). Moreover pollution generates public health problems. Calculating, assessing and managing water that can really be mobilized inevitably raises questions of governance, the implementation of scientific impact studies, and practical development of every unique and singular space (eg Nyikina Country). This issue concerns all potential or current operating resource extraction sites in the world particularly where indigenous peoples live.

References:

Ref. 01: Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), *Guidelines for Ethical Research in Australian Indigenous Studies*, 2011, 17 p.

Ref. 02: SHERBURNE Donald W., 1966, *A key to Whitehead's Process and Reality*, TheMacmillan Company, 263 p. Quote Glossary p.205. The major work of A.N. Whitehead is *Process and Reality. An essay in cosmology, corrected Edition*, Edited by David Ray Griffin and Donald W.Sherburne, 1978 (Original printed in 1929), 413 p. (Abbreviation PR, followed by the paragraph number from a to z).

Ref. 03 : DESHAIES Michel, *Les territoires miniers, Exploitation et reconquête*, Ellipses, 2007, 224 p. so as DESHAIES Michel, & BAUELLE Guy, *Ressources naturelles et peuplement*, Ellipses, 2013,

Ref 04 : VAILLANT Philippe, 2008, *Territorial experience enlightened by A.N. Whitehead Thought: Convivial regions' potentiality and applications to the region "between the Vosges and Ardennes"*, 611 p.

Ref. 05 : ILLICH Ivan, 1973, *Tools for Conviviality*.

Ref. 06 : GRIFFIN David Ray, 1998, *Unsnarling the World-Knot : Consciousness, Freedom, and the mindbody Problem*, Berkeley & Los Angeles: University of California Press,. Being translated into Chinese. Trad H. Vaillant, *Démêler le noeud du monde, Conscience, Liberté et le problème de l'Esprit et du Corps*, (DNM), Avril 2003 (inéédite). See chapter 3 to 5 for the "hard core of common sense".

"Whatever is found "in practice" must lie within the scope of the metaphysical description. When the description fails to include the practice, the metaphysics is inadequate and requires revision".(W. PR 13 b)

Ref. 07 : GRIFFIN David Ray, 1993, COBB John B., MARCUS JR, FORD PP., PETE A., GUNTER Y., OCHS Peter, *Founders of constructive postmodern philosophy : Peirce, James, Bergson, Whitehead and Hartshorne*, Albany: State University of New York Press,.

A link between analytical philosophy and organic philosophy has been elaborated by DUMONCEL Jean-Claude, 1986, PhD, *Le système de Whitehead et la philosophie analytique*, 753 p. being edited.

See also The Center for Process Studies: What is Process Thought ? Online at <http://www.ctr4process.org/about/process/>

Ref. 08 : WHITEHEAD, PR 5. See commentary in WEBER Michel, 2003, *La dialectique de l'intuition chez A.N. Whitehead. Introduction à la lecture de Procès et réalité*, Ontos Verlag, , p.80 to111

Ref. 09 : UNESCO, 2009, *IWRM guidelines at river basin level* Online at : <http://unesdoc.unesco.org/images/0018/001864/186417e.pdf> and http://www.gwptoolbox.org/index2.php?option=com_reference&reference_id=198&pop

Ref. 10: McDUFFIE Magali, Mardoowarra Living Water, Online at : http://www.youtube.com/watch?v=sCq1ZCOWA_Q See also many references at <http://www.mardoowarra.com.au/>

VERNES, T., WATSON, J., WATSON, A., POELINA, N., WATSON, W. & CAMILLERI, J. (2011) *Nyikina-Mangala Mardoowarra Wila Booroo: Natural and Cultural Heritage Plan*. Nyikina Mangala Aboriginal Corporation and WWF-Australia, published by WWF-Australia. Online at: http://awsassets.wwf.org.au/downloads/wa032_nyikina_and_mangala_mardoowarra_wila_booroo_heritage_plan_1dec11v2.pdf

Ref. 11 : BRACONNIER Patrice, 2011, RUESS, *Quelles spécificités de compétences et de formation en ESS ?*, 32 p. Online at: http://www.riuess.org/index.php?option=com_docman&task=doc_download&gid=79&Itemid=

Ref. 12: French Australian forum on water and land management, 12-14 June 2013, See 1 hour video Online at <http://www.youtube.com/watch?v=zpmkWzBMGkg&feature=youtu.be> (Opening of the Forum with French Ambassador in Australia Stephane ROMANET, Dr Erik LITHANDER, Dr K.atherine DANIELL, Dr Quentin GRAFTON, Dr Anne POELINA, Dr Olivier BARRETEAU, Dr Jean ALBERGEL, Dr Marcus HOWARD)

Ref. 13 : See on Australian Human Rights Commission online the speech by Dr William Jonas AM : <http://www.humanrights.gov.au/news/speeches/site-navigation-43> and also Ruth Forsythe's article: <http://www.independentaustralia.net/2012/australian-identity/the-meaning-of-indigenous-sovereignty/>

Ref. 14a: ABC News, December 06, 2011, 18:16:21, "Court quashes Kimberley gas hub land grab", Online at : <http://www.abc.net.au/news/2011-12-06/court-quashes-Kimberley-gas-hub-land-grab/3715390>

Ref 14b : Australian Institute for Aboriginal and Torres Strait Islander Studies, 1994, *Aboriginal Australia Map*, Aboriginal Studies Press, Canberra.

Ref. 14c : http://hotcopper.com.au/post_single.asp?fid=1&tid=1733256&msgid=10037599

Ref. 15 : WEIR Jessica K.,2012, *Country, Native Title and Ecology*, ANU, E Press, 174 p. Online at <http://epress.anu.edu.au>

BURKE Paul, 2011, *Law's Anthropology. From Ethnography to expert testimony in Native Title*, 326 p. Online at <http://epress.anu.edu.au>

See informations at The Native Title Tribunal, Online at www.nntt.gov.au See also ATSIC/DIA, Engaging with aboriginal western Australians, <http://www.dia.wa.gov.au>

Ref. 16 : UNESCO, *Declaration on Cultural Diversity*, 2 November 2001;

ONU, *Convention concerning indigenous and tribal peoples in independent countries*, 1989 (N° 169);
ONU, *United Nations Declaration on the Rights of Indigenous Peoples*, 61/295, 13 September 2007

The United Nation Charter of Human Rights promotes the wellbeing and sacredness of all life not just human life. The United Nations, Charter of the United Nations, 24 October 1945, 1UNTS XV1 , is available at (www.unhcr.org/refworld/docid/3ae6b3930.html) accessed 22 July 2013.

Ref. 17 : Government of Western Australia, Department of Industry and Resources, *Regional Mineral Program. Developing the West Kimberley's Resources*, Main Report, August 2005, 238 p. This report contain no alternative economic sustainable development, no evaluation of alternatives.

Ref. 18 : Crough, G. & Christophersen, C. (eds) 1993, *Aboriginal People in the Economy of the Kimberley Region*, Australian National University, North Australia Research Unit, Darwin.

Ref. 19 : Government of Western Australia, Department of Water, 2010 December, *Kimberley Regional Water Plan, 2010-2030, Strategic Directions and actions* 71p., *Supporting details*, 101 p.; and following working discussion paper: Fitzroy catchment subregion overview and future directions ; La Grange subregion overview and future directions ; Desert subregion overview and future directions ; Dampier Peninsula subregion overview and future directions.

Ref. 20 : The Australian National University, E Press, (ANU) 2011, *Basin futures, Water reform in the Murray-Darling Basin*, Edited by Daniel CONNELL and R.Quentin GRAFTON, 477 p. : K.A. Daniell's article « Enhancing Collaborative Management in the Basin » p.413-437. See specially page 432.

Ref. 21 : BARRETEAU, O., P. W. G. BOTS, and K. A. DANIELL. 2010. *A framework for clarifying "participation" in participatory research to prevent its rejection for the wrong reasons*. Ecology and Society 15(2): 1. [online] URL: <http://www.ecologyandsociety.org/vol15/iss2/art1/>

Ref. 22 : See the one hour French documentary "Thalassa" entitled "Grand Format: Les terres sacrées du Kimberley" France 3 , 1st Mars 2013. http://www.france3.fr/emissions/thalassa/grand-format-les-terres-sacrees-du-kimberley_30261

See also the documentary by French filmmaker Eugenie Dumont "Heritage Fight" <http://heritagefight.wordpress.com/>; <http://www.visionsdureel.ch/en/doc-market/catalog/film/f/heritage-fight/> and a short extract at <http://www.youtube.com/watch?v=CKqQ5koBe80>

Ref. 23 : WA Aboriginal Heritage Act see Internet Site : Complete text Online at : [http://www.slp.wa.gov.au/statutes/swans.nsf/5d62daee56e9e4b348256ebd0012c422/045a412e09666d01482565e10017aac0/\\$FILE/Aboriginal%20Heritage%20Act%201972.PDF](http://www.slp.wa.gov.au/statutes/swans.nsf/5d62daee56e9e4b348256ebd0012c422/045a412e09666d01482565e10017aac0/$FILE/Aboriginal%20Heritage%20Act%201972.PDF) and more information at <http://www.daa.wa.gov.au/en/Section-18-Applications/Heritage-management/Aboriginal-Heritage-Act/>

Ref.24: See <http://www.robinchapple.com/aboriginal-heritage-act-1972>

Ref. 25: BROWSE (LAND) AGREEMENT ACT 2012 http://www.austlii.edu.au/au/legis/wa/consol_act/baa2012203/sch1.html

Ref. 26 : Agreement Bill 2012 state (Bill No. 324) See Internet Site : [http://www.parliament.wa.gov.au/parliament/Bills.nsf/23C14FE1345F69BF48257AB7002B0098/\\$File/Bill324-1.pdf](http://www.parliament.wa.gov.au/parliament/Bills.nsf/23C14FE1345F69BF48257AB7002B0098/$File/Bill324-1.pdf)

Ref. 27 : BURU ENERGY, 2012 October, Corporate Update, 36 p.

Ref. 28 : WA Report 2005, *Overcoming Indigenous Disadvantage*, Online : <http://www.daa.wa.gov.au/Documents/ReportsPublications/OvercomingIndigenousDisadvantage/pg24-34DemographicProfile.pdf>

Ref. 29 : PREAUD Martin, 2009, PhD, *Loi et culture en pays aborigène. Anthropologie des réseaux autochtones du Kimberley*, Nord-Ouest de l'Australie, 541 p. See summary at <http://eprints.jcu.edu.au/11819/1/01front.pdf> Access to the thesis: <http://www.idref.fr/145408302>

Ref. 30 : BERQUE Augustin, 2000, *L'Ecoumène. Introduction à l'étude des milieux humains*, Editions Belin, Paris, 271 p.,

Ref. 31 : LANGTON Marcia & PERKINS RACHEL, *Aborigènes, une histoire illustrée des premiers habitants de l'Australie et peuples insulaires*, Melbourne University Press 2008, French edition "Au vent des îles", 2012, 393 p. See Part.5 for Mardoowarra-Fitzroy River Kinnane Steve "Une histoire de sang / A history of blood" p.227-284.

Ref. 32 : TUHIWAI SMITH Linda, 1999 (1988), *Decolonizing Methodologies. Research and Indigenous Peoples*, Zed Books Ltd London & New York, 208 p.

Ref. 33 : Aboriginal and Torres Strait Islander Commission (ATSIC) 2003, *Malarabah Regional Council Strategic Plan 2003 and Beyond*, Aboriginal and Torres Strait Islander Services, West Kimberley Regional Office, Derby, Western Australia.

Aboriginal and Torres Strait Islander Services (ATSIS) 2004, *Malarabah Regional Council Annual Report*, West Kimberley Regional Office, Derby, Western Australia.

Crough, G. & Christophersen, C. (eds) 1993, *Aboriginal People in the Economy of the Kimberley Region*, Australian National University, North Australia Research Unit, Darwin.

- Henry, B.R., Houston, S. & Mooney, G.H. 2004, '*Institutional racism in Australian healthcare: A plea for decency*', Medical Journal of Australia, vol.180, pp.517-520.
- Kimberley Aboriginal Law and Culture Centre (KALACC) 1994, *Yirra: Land Law and Language Strong and Alive*, KALACC, Fitzroy Crossing, Western Australia.
- Kimberley Aboriginal Law and Culture Centre (KALACC) 1996, *Yirra: Land, Law and Language*, Magabala Books, Broome, Western Australia.
- McCord, M. & Anastassiou, P. (eds) 1992, *A Field of short Poppies: A journey into the extraordinary lives of ordinary people*, Doubleday, Sydney.
- McLeod, D. 1984, *How the West was Lost: The Native Question in the Development of Western Australia*, D. McLeod, Port Hedland, WA.
- Sanderson, J. Lieutenant General (Retired) 2006, *Special Advisor on Indigenous Affairs Quarterly Report to the Premier and the Minister for Indigenous Affairs, 1st Quarter: 1 September 2006-30 November 2006*, Department of Premier and Cabinet, Perth, Western Australia.
- Stokes, B., Johnson, G. & Marshall, L. 1980, *Nyikina-English: a first lexicon*, held at Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.
- Wooten, H. 2004, '*Self-determination after ATSIC*'. Dialogue, The newsletter of the Academy of the Social Sciences in Australia, vol. 23, no. 2, pp. 16-24.
- Ref. 34 : ASPECT Bernard See on Wikipedia "Expérience d'Aspect", http://fr.wikipedia.org/wiki/Exp%C3%A9rience_d%27Aspect, or "Bell test experiments", http://en.wikipedia.org/wiki/Bell_test_experiments
- Ref. 35 : STENGERS Isabelle, PRIGOGYNE Ilya, 1983, *La Nouvelle Alliance*, Folio, Essais , Paris, 439 p. & . STENGERS Isabelle, 2002, *Penser avec Whitehead : une libre et sauvage création de concepts*, Seuil, Paris, 582 p.
- Ref. 36 : Redstone Declaration of Indigenous Peoples; See ref. 10. Online at : <http://greenfiretimes.com/2010/08/a-declaration-of-the-rights-of-the-peoples-and-the-earth/>
- Ref. 37 : GRIFFIN, State University of New York Press, 2007, *Whitehead's Radically Different Postmodern Philosophy*, 241 p. The description of the reformed subjectivist principle is at p 217-241.
- Ref. 38 : DARDEL Eric, 1990, *L'Homme et la Terre : nature de la réalité géographique*, Editions du CTHS, 200p (original edition 1952).
- Ref. 39 : DELEUZE Gilles, 2008, *Différence et Répétition*, PUF, Epiméthée, 409 p. Quote p. 364-388.
- Ref. 40 : WEBER Michel and DESMOND William, Jr (Eds), *Handbook of Whiteheadian Process Thought*, Ontos Verlag, Frankfurt, Paris, 2008, Volume 1, 691 p.
- Ref. 41 : GRANGE Joseph, 1997, *Nature. An Environmental Cosmology*, State University of New York Press, 272 p.. GRANGE Joseph, 1999, *The City. An Urban Cosmology*, SUNY Press, 267 p.
- Ref. 42 : Bohensky, E. L., and Y. Maru. 2011. *Indigenous knowledge, science, and resilience: what have we learned from a decade of international literature on "integration"?* *Ecology and Society* 16(4): 6. <http://dx.doi.org/10.5751/ES-04342-160406>
- Ref. 43 : LATOUR Bruno, 1991, *Nous n'avons jamais été modernes. Essai d'anthropologie symétrique*, La découverte, Paris, 207p. See also RIST Gilbert, 1996, 2001, 2007, *Le développement. Histoire d'une croyance occidentale* (Presses de Sciences Po.)
- Ref. 44 : TEILHARD DE CHARDIN, *Le phénomène humain*, Le Seuil, Paris, 1955, 318 p. English traduction: *The Human Phenomenon* (1999), Brighton: Sussex Academic, 2003
- Ref. 45 : BERQUE Augustin, 1996, *Etre humain sur la Terre*, Gallimard, Paris, 212 p. See p.174-176. TARDE Gabriel, 1893, *Monadologie et sociologie*.
- Ref. 46 : BRACONNIER Patrice, 2005, *Un processus de gouvernance dans le sens du développement territorial*, PhD, Poitiers, France, 320 pp.
- TWITCHETT William, 1997, *Le site urbain : potentialités : réflexions sur le développement responsable et équilibré des établissements humains à partir de six exemples français, égyptiens et australiens*, Éditions du Septentrion, Lille, France, PhD, Research Director : Paul CLAVAL, 420 pp.
- Ref. 47 : Hill, R., Golson, K., Lowe, P.A., Mann, M. K., Hayes, S. and J.E. Blackwood (Editors) 2006. *Kimberley Appropriate Economies Roundtable Forum Proceedings*. Convened 11-13 October 2005, Fitzroy Crossing, WA, by the Kimberley Land Council, Environs Kimberley and Australian Conservation Foundation. Australian Conservation Foundation, Cairns.

Cape Town's V&A Waterfront Project

Adaptive Re-use as a Foundation for Sustainable Urban Renewal

Pieter VAN ZYL

Head of Department: Environmental Affairs and Development Planning
Western Cape Provincial Government
Cape Town, South Africa

Synopsis

The Victoria and Alfred Waterfront Project in Cape Town, South Africa, is an urban regeneration project that has over the past twenty-five years successfully transformed the historic and previously under-utilised part of the Port of Cape Town into the City's premier tourist, retail, entertainment, commercial and residential destination. This paper gives a brief historical overview of the project and its cultural and social context. It then describes how the new facilities for residential, commercial, retail and leisure uses have been developed, through adaptive re-use of harbour sheds, workshops and stores, while retaining the character of Cape Town's waterfront as a working harbour. The paper is a case study on how a development idea was turned into action – it will also describe how an innovative planning and land use management process (known as the "Package of Plans Process") has been used by the developer, Victoria & Alfred Waterfront (Pty) Ltd and the Cape Town City Council in facilitating an urban regeneration success story. The paper concludes with an assessment of the sustainability of the Victoria and Alfred Waterfront Project, which could be of benefit to other city and harbour authorities around the world.

1. Introduction

For over forty years some of the world's most innovative real estate developments have taken place at waterfronts. In port and riverfront cities such as Boston, Baltimore, San Francisco, Vancouver and Toronto in North America; Cardiff, London, Rotterdam and Barcelona in Europe; and Sydney, Brisbane, Melbourne, Singapore and Osaka in the Pacific Rim, waterfronts have become the new retail, leisure and entertainment destinations. Successful waterfront projects have re-established the rich cultural and historic links between land and water in many port and river cities across the globe.

About thirty years ago, those who lobbied for what is today Cape Town's Victoria and Alfred (V&A) Waterfront were regarded as idealistic dreamers. When Victoria & Alfred Waterfront (Pty) Ltd (V&AW) was formed in 1988 and work started in 1989, many Capetonians still said 'it will never happen'. Today, the project receives an average of 22 million visitors annually and commercially it has been South Africa's biggest real estate success story.

Furthermore, back in 1989 no financial institution was willing to provide finance for the project when it was announced. It required the backing of the project's then owner, State-owned South African Transport Services (later corporatised to become Transnet Ltd) to provide the initial funding of South African Rand (ZAR) 205 million to kick-start the development of the project.

The V&A Waterfront has given Capetonians a new sense of pride; it has exceeded expectations and it has earned its place as South Africa's most visited destination — bringing new meaning to the romantic description of Cape Town as the 'Tavern of the Seas'.

2. International and National Context

Situated at the southernmost tip of the African continent, South Africa covers an area of more than 1,2 million square kilometers. The terrain varies enormously from sun-scorched deserts, plains and mountains to lagoons and coastal wetlands. Climatic conditions vary from sub-tropical on the eastern coast to the Mediterranean-style climate of the Western Cape. South Africa is the most developed country on the African continent and is home to almost 52 million people.

Cape Town (with a metropolitan population of nearly 3,7 million people) is the legislative capital of South Africa. The City, also the capital of the Western Cape (which is one of the nine provinces of South Africa), is linked to the rest of the country by a modern infrastructure of road, rail and domestic air connections. Economic growth in the Western Cape is forecast to average 3.9% between 2012 and 2017. Finance, real estate and business services, as well as tourism and agriculture (mainly viticulture and fruit) are the economic mainstays of the provincial economy.

Cape Town's breathtaking scenery, pleasant climate, rich history and beautiful winelands make it a favourite for tourists. Many visitors are surprised at the leading edge technology available in Cape Town, with advanced satellite links, cellular telephone and electronic banking facilities. State of the art film and video production facilities as well as recording studios have also recently been developed in the City in response to growing international demand to use Cape Town as a base for film production.

The V&A Waterfront lies on the shores of Table Bay and has a dramatic physical setting against the backdrop of Table Mountain. With easy access to the central business district, Cape Town's two major freeway access routes and the Atlantic seaboard, the V&A Waterfront is favourably located from a business, residential and leisure point of view. The V&A Waterfront is easily accessible from most parts of metropolitan Cape Town and is within twenty minutes' drive from Cape Town International Airport.

South Africa received just over 9 million international tourists in 2012, a 10% increase over the previous year. The Western Cape received 1,3 million of these visitors, who spent ZA Rand 18.5 billion in the province (up nearly 2% from the previous year).

Cape Town regularly receives international tourism accolades and awards, with the following being the most noteworthy in the past year:

- Number Two City in the World, *Condé Nast Traveler Readers' Choice Awards 2012*
- Top City in Africa, *Condé Nast Traveler Readers' Choice Awards 2012*
- *Blue Flag Status 2012* – Eight beaches and two marinas.
- Best Beach Destination in Africa, *World Travel Awards 2012*
- The World's Top City in Africa and the Middle East, *Travel+Leisure World's Best Awards 2012*
- Fourth Top City in the World, *Travel+Leisure World's Best Awards 2012*
- Muizenberg voted One of *National Geographic's World's 20 Best Surf Towns*
- Table Mountain announced as a *New Seven Wonders of Nature*

3. Brief Historic Review

The developmental history of Cape Town's Foreshore and Waterfront has its origins in 1652, when the Dutch East India Company established a refreshment station at the Cape to serve its trading fleets en route to and from its colonies in Asia.

Table Bay is not a natural harbour. Although partially protected from the summer south-easterly gales, the winter north-westerly storms drove hundreds of ships aground with periodic tragic loss of life. The first Dutch commander, Jan van Riebeeck, built the first small jetty that remained in use until well into the 19th Century.

Another legacy from the Dutch period was the system of coastal fortifications constructed along the Table Bay coastline, to defend Cape Town against foreign invaders. Two of these fortifications, Chavonnes Battery (circa 1726) and Amsterdam Battery (circa 1794) were located within the area that now forms part of the V&A Waterfront property. The remains of these two fortifications were the subject of extensive archeological investigations. These remains now form an integral part of the Waterfront's cultural-historic landscape and have been and will be incorporated as features into new development projects.

Although the first British occupation of the Cape in 1795 transformed the local economy, very little harbour development took place before 1860. In June 1858 serious winter storms wrecked over 30 vessels in the bay. As a consequence, Lloyds of London refused to cover ships wintering in Table Bay, until a proper harbour structure was constructed.

In 1859 plans were approved by the Cape Governor, Sir George Grey, and the British Imperial Government for the construction of Cape Town's first harbour. On a sunny September 17, 1860 nearly all of Cape Town's inhabitants gathered at the Waterfront. Amidst a carnival atmosphere, Midshipman HRH Prince Alfred, Queen Victoria's second son, tipped the first load of stone to start construction of the breakwater for Cape Town's first harbour. It was a day of great celebration for the town's folk. Apart from the occasion of the first Royal visit to the Cape Colony, it was a significant day for Capetonians who had suffered the vexations, dangers and delays of the previously inadequate harbour facilities.

The Alfred Basin, the first of a number of basins providing shelter in Table Bay for shipping, was completed ten years later in 1870. However, almost immediately it was too small for the increasing fleets and growing size of the ships. Steam ships had replaced sail, while gold and diamonds had been discovered and the development of the South African hinterland had begun. A second basin, the Victoria Basin, was completed 35 years later and served as the gateway to Southern Africa until the mid-1930's.

However, nobody anticipated that Cape Town would lose its gateway status with the growth of air transport, nor did anybody anticipate that by the mid-1940's the City's reclaimed Foreshore would, in effect, cut off the old City from the sea.

In 1937 the South African Parliament approved plans for a new deep water harbour basin to be constructed to the south of the Victoria and Alfred Basins, with an associated extensive land reclamation project to create a new Cape Town Foreshore. Work started in 1938 and was completed in 1945, after being delayed by the Second World War. A 230ha tract of Foreshore land was created in the process for city expansion. City development on the Foreshore was extremely slow and by the 1970's much of the area remained as a treeless wasteland of sand and all-day parking areas. Furthermore, the Foreshore Freeway construction programme of the 1960's added an extensive elevated freeway system to facilitate access and vehicular movement around Cape Town's CBD, but it effectively also cut the city off from its historic water's edge.

Although the Victoria and Alfred Basins became the centre for Cape Town's fishing industry and smaller scale ship repair activities during the 1960's, the area also became increasingly isolated as a result of customs fences, as well as access control due to strategic oil tank farm installations, and by the 1970's the area had become quite derelict and significantly underutilised.

In 1984, after a visit to *The Rocks Project* in Sydney Cove, the then Mayor of Cape Town, Alderman Sol Kreiner, formed a Waterfront Steering Committee and started lobbying to re-establish the City's links with the sea. He also used his office to obtain permission for a festival in the historic harbour precinct, through which he hoped to focus public attention on the area.

It was as a result of this growing public awareness that a committee was established in 1985 by the Ministers of Transport Affairs and of Environmental Affairs and Tourism to investigate the potential for greater public use of harbour areas, in Cape Town and the other port cities in South Africa. The committee was convened under the chairmanship of Arie Burggraaf, SA Harbours' Chief Engineer at the time. The Burggraaf Committee reported on Cape Town Harbour in 1987, proposing that the historic docklands around Victoria and Alfred Basins be redeveloped as a mixed-use area, with the continuing operation of a working harbour. The Cabinet of the South African Government accepted the recommendations in full in June 1988.

In November 1988, Victoria and Alfred Waterfront (Pty) Ltd ("V&AW") was established as a wholly-owned subsidiary of Transnet Ltd to redevelop the historic docklands around Victoria and Alfred Basins as a mixed-use area with a focus on retail, tourism and residential development, with the continued operation of a working harbour. The main planning objective for the project was the re-establishment of physical links between Cape Town and its historic waterfront in order to create a quality environment; a desirable place to work, live and play; and a preferred location to trade and invest for Capetonians and visitors.

From an economic point of view, the historic part of the Port of Cape Town had become underutilised as a result of changing shipping technology and harbour expansion. A valuable land asset had to be converted to alternative uses, in order to generate value and income for the landowner. Extensive market research was undertaken, covering aspects such as retail demand, tourism opportunities, demand for hotel development and the state of the residential market along Cape Town's Atlantic seaboard.

4. Development Programme and Progress

After only a year of public consultation and participatory workshops, as well as negotiations to obtain Cape Town City Council's planning approval, redevelopment started at the end of 1989 with the installation of new services infrastructure. This was a victory for the citizens of Cape Town, who had campaigned vigorously in the late 1970's and early 1980's to reverse the isolation of the City from its waterfront as a result of land reclamation, railway lines and freeway construction. This general public support, as well as the proactive participation by the City Council and other authorities in the planning and design of the V&A Waterfront during the initial master planning stage, were critical elements to ensure a vital kick-start for the project.

Another vital element in the V&AW's overall development concept was the retention of the working elements of the harbour, which provide both vitality and an exciting backdrop to new development. These working harbour features include the harbour tugs, the pilot and fishing boats, as well as shipping traffic to the Synchronlift and Robinson Graving Dock. Authenticity has been a key objective in the replanning and design of the V&A Waterfront area and the restored fabric provides a rich maritime experience for visitors. This approach of valuing what already exists and employing adaptive re-use has been a foundation of the Project's commercial success, as well as for sustainable urban renewal.

The launch of the V&A Waterfront project in 1989 took place at a very difficult time in South Africa's history: It was towards the end of the minority Government rule, but it was still more than five years before the first democratically elected Government would come to power in May 1994. South Africa was politically isolated from the rest of the world and the country was in a general economic recession and experiencing a tumultuous socio-political transition.

There were no Government or Municipal subsidies to kick-start the V&A Waterfront project. It had to succeed commercially from the outset and had to be sustainable on the basis of the domestic support and acceptance of the project by the public of Cape Town. The North American waterfront precedents were encouraging, but nothing like this had previously been attempted in South Africa. Urban conservation, a key aspect of the development plan, was regarded by many to be over-idealistic and costly.

4.1 Development Goals and Objectives

The corporate ethic adopted by the V&AW for its initial Urban Development Framework in 1989 was to make the historic harbour of Cape Town a very special place for Capetonians and visitors.

To fulfill this ethic, the following **Project Goals** were set:

- Create appropriate public places within the V&A Waterfront;
- Develop the V&A Waterfront in ways which account for its special location, conditions and history; and
- Achieve financial self-sufficiency and the maximization of value through development and management.

The following specific **Project Objectives** were set to achieve these project goals:

- Create a rich and diverse environment;
- Promote tourism and recreation;
- Create residential development opportunities;
- Create a viable business base;
- Restore the historic link between the harbour and the City of Cape Town;
- Conserve and enhance elements with cultural significance;
- Improve public access to the waterside; and
- Adopt a flexible development programme that can respond to changing market trends.

4.2 Phase One

Although the initial urban planning covered the entire 123-hectare site, the first development phase focused on the Pierhead Precinct. Within this precinct the original Port Captain's Offices, the City's first Electric Light & Power Station, the warehouses and numerous smaller buildings and dwellings had suffered through years of insensitive and inadequate maintenance, and industrial use. The general environment retained the elements of a working harbour, while the rich fabric of crafted granite quay walls and timber wharves and jetties offered one of the most romantic settings in the City. The refurbishment of these buildings for the new uses took place during 1990, and was largely completed by Christmas of that year.

The Pierhead became the initial public focus of the Waterfront project and the building restoration programme introduced new uses such as restaurants, taverns, speciality shops, the V&A Hotel, a theatre, an arts and crafts market, and the national Maritime Museum into derelict harbour warehouses, workshops and stores. Some new marina moorings and hard and soft landscaping complemented the Pierhead's quayside ambience. The success of the first phase of the development, which would set the overall project on a trajectory of success, was to value what was already there and to employ adaptive re-use techniques in the design and tenanting of the buildings.

4.3 Phase Two

Phase Two of the project saw the completion of the 26,500m² Victoria Wharf speciality retail and entertainment centre at the end of October 1992. The additional restaurants, entertainment and speciality shopping provided the critical mass necessary to make the V&A Waterfront the most visited shopping and entertainment destination in the Cape Town downtown for locals, domestic visitors and international tourists alike.

The restoration of the buildings and other historic structures in the Portwood Ridge Precinct was also part of this development phase. The precinct is a treasury of buildings spanning almost a century from 1870 to the mid-20th Century. There were numerous residences, the earliest being the double-storey Dock House (1870), and the more modest Moorings 1 to 5 (1870-1889). There was also the 1901 Breakwater Prison. By 1905 they had been joined by double storey dwellings like Ulundi (1889), Windermere, Abbotsford, Kinellan, Pentridge, Parkhurst/Lotana and Alfred House – all had been linked with harbour or prison functions for almost a century. The houses have been converted to offices and hospitality accommodation.

The old Breakwater Prison was leased to and converted by the University of Cape Town into its new Graduate School of Business campus. This development included the 330-room Breakwater Lodge, as a commercial venture where accommodation not required for the Business School would be placed on the hospitality market. It has been a resounding success. During 1993 the Waterfront City Lodge hotel was opened and the Caltex service station and regional head office was also completed.

4.4 Phase Three

Phase Three of the project got underway in January 1994. During 1994 and 1995 the following major projects were completed: BMW Pavilion, Auto Atlantic BMW motor dealership, the Two Oceans Aquarium and the Granger Bay shore protection work

4.5 Phase Four

Projects which were completed during 1996 and the first quarter of 1997 comprised an 18,000m² extension to Victoria Wharf Shopping Centre, the 120-room, five-star Cape Grace Hotel on West Quay, where the New Basin had been created through the flooding of the oil storage tank farm, and the 330-room five-star Table Bay Hotel on Quay 6.

4.6 Phase Five

The planning approvals for Phase Five of the project were obtained from the Cape Town City Council during the latter half of 1999. This development phase had two major initiatives: Sector One of the V&A Marina residential development and a mixed use development in the Clocktower Precinct.

Upon completion, the V&A Marina luxury housing project would comprise of some 550 apartments and 150 moorings for yachts and other recreational craft in the heart of the V&A Waterfront. Construction on the first phase got underway at the beginning of 2000. It has proved to be some of the most sought-after new residential accommodation in Cape Town, with the first phase sold out off plan within less than seven months. The first residents moved in during the middle of 2001. Sector One of the V&A Marina, comprising of 10 construction phases with a total of 273 apartments, was completed at the end of 2004.

The development of the Clocktower Precinct has seen the integration of fishing industry activities with new uses such as retail, offices and a public ferry terminal to service Robben Island. Used at various times as a hospital, leper colony and a military base, Robben Island gained international recognition as the site of the political prison where former President Nelson Mandela spent 18 years of his life. The Island, declared a World Heritage Site at the end of 1999, is operated by the State as a museum and public visitor attraction. Linking it with the V&A Waterfront ensured a synergistic relationship between two of Cape Town's most important visitor attractions.

The first phase of the Clocktower Precinct project also included a 25,000m² corporate headquarters for the Board of Executors. The ground floor of the office project incorporated the historic ruins of the Chavonnes Battery, the Dutch coastal fortification dating from 1726. The balance of the first phase comprised the Nelson Mandela Gateway to Robben Island, a 1,000-bay parking garage, 5,600m² of retail shops and restaurants, 3,800m² of offices and 2,500m² of fishing industry uses. This development phase was completed in mid-2002.

4.7 Phase Six

Construction on Phase Six of the V&A Waterfront Project started in 2005 and was completed in 2009. This development phase comprises of the following projects: Sector Two of the V&A Marina residential development (230 apartments), Kerzner International's luxury 150-key One & Only V&A Waterfront Hotel, the 8,500m² Regional Headquarters of BP, a 12,000m² extension to Victoria Wharf Shopping Centre, a 1,600-bay parking garage and an extension to the V&A Hotel.

4.8 V&A Waterfront Sale Transactions

The mixed use character and proven commercial success of the project ensured a highly competitive international trade sale of the property in September 2006, when the owners (a consortium of State-owned transport and logistics corporation Transnet Ltd and its three pension and provident funds) sold it for an all-time South African property sales record of ZA Rand 7 billion. The new owners were a joint venture consisting of Dubai World's investment company, Istithmar PJSC (37,5%), a leading UK-based property company London & Regional Properties (37,5%) and a South African Black Economic Empowerment consortium (25%).

In 2007 the new owners announced their intentions to spend at least another ZA Rand 7 billion to extend the V&A Waterfront's development programme, ahead of the 2010 FIFA Soccer World Cup to be hosted by South Africa, and to also lure high-end international retailers to the Victoria Wharf Shopping Centre. However, when the global financial crisis struck in 2008, Dubai World ran out of money. By mid-2010, most of the offshore consortium's promises had come to naught. As a consequence, the V&AW owners were forced into looking for prospective purchasers and new investors.

In the latter part of 2010 the Government Employees Pension Fund (GEPF), represented by the Public Investment Corporation Ltd (PIC), together with Growthpoint Properties Ltd announced that they had concluded a deal to purchase, in equal proportions, the V&A Waterfront. The transaction represented South Africa's biggest single property transaction to date, with the new owners paying a combined investment of ZA Rand 9,7 billion. The GEPF is Africa's largest pension fund and has more than 1.2-million active members, around 318 000 pensioners and beneficiaries, and assets worth ZA Rand 819 billion. This effectively means that the V&A Waterfront is now owned by more than 1,5 million South Africans, as a result of GEPF's investment portion alone. Growthpoint is the largest South African listed property company and owns a portfolio of some 460 properties throughout South Africa and in Australia, spanning the retail, office and industrial sectors.

4.9 Ongoing V&A Waterfront Development

The new owners wasted little time in confirming their commitment to the ongoing development programme of the V&A Waterfront. In early 2011 they announced plans for the refurbishment of the Victoria Wharf Shopping Centre's Food Court and a further 25,000 m² expansion of the Shopping Centre, as well as the redevelopment of the Clocktower Precinct over the next four years. This latter development will establish a new professional business district at the heart of V&A Waterfront, while maintaining the heritage fabric of one of the oldest development sites in Cape Town. In addition to the refurbishment of the existing Clocktower Retail Centre, the other areas earmarked for development include the unused landmark Grain Silo buildings and the Collier Jetty alongside the retail centre.

The new developments already underway in the V&A Waterfront include:

- The 18,000 m² No 1 Silo Office Project, which is Cape Town's first 6-star Green Star SA rated building by the *Green Building Council of South Africa*
- Construction of 31 apartments, known as No 2 Silo Project
- The proposed redevelopment of the historical Grain Silo buildings into a multi-functional design-orientated space, which may include a design museum, gallery space, auditorium, public market and associated restaurants and shops. A hotel could also be included in the redeveloped Grain Silo space
- Conversion of the Portwood Square Office Building into 271 rental apartments

Further development at the V&A Waterfront is possible since it has nearly 604,000 m² of bulk development rights approved by the City of Cape Town. Approximately 64% (384,000 m²) has been developed and approximately 36% (220,000 m²) remains available for development. The new owners have recently announced that they plan to bring a capital injection of a further ZA Rand 500-700 million per year, for at least the next ten years, to develop the remaining undeveloped bulk.

5. Regional Economic Impact of the Project

Five independent research studies on the job creation impacts of the V&A Waterfront project have been undertaken since 1992. The findings are an independent assessment of the project's contribution to Cape Town's regional economy.

The last survey undertaken in 2004 showed that the total permanent employment at the V&A Waterfront, excluding the fishing industry and industrial activities, amounted to 11,100 jobs. Over 80% of the jobs are newly created jobs. Therefore, it represents real regional economic growth and not displaced growth. The fishing industry and industrial sector jobs within the V&A Waterfront is estimated at 4,220.

The cumulative permanent jobs at the V&A Waterfront are projected to grow to 12,270 by the completion of the development, excluding the jobs in the fishing industry and industrial sectors.

Employment in the V&A Waterfront's construction and development phases since 1990 has amounted to about 15,850 equivalent annual jobs, of which 50% were in the entry-level category of labourer. Over the project's estimated 30-year development horizon, a cumulative total of some 21,000 jobs are likely to have been sustained at the V&A Waterfront through the project's development and construction activities.

The research indicated that an employment multiplier effect of 3,1 is applicable to V&A Waterfront employment creation – therefore, for every new job directly created at the Waterfront, up to 2,1 are created indirectly elsewhere in Cape Town's economy. Similarly, the multiplier for construction is estimated at 2,9.

6. Principles for Sustainable Urban Waterfront Development

The classic definition of sustainable development from the World Commission on Environment and Development's 1987 report entitled *"Our Common Future"* (the *"Brundtland Report"*) bears re-stating: *"Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs"*.

Sustainable development therefore has to do with the environmental, social and economic dimensions of urban and regional planning and, fundamentally, seeks to promote a better quality of life for both the community and the individual.

In the context of urban waterfront projects, two international organisations have jointly formulated principles for the sustainable development of urban waterfront areas. At the United Nations' Global Conference on the Urban Future (Urban 21) held in Berlin in July 2000, Wasserstadt GmbH (based in Berlin) and the International Centre Cities on Water (based in Venice) formulated ten principles that can be used to test and evaluate the sustainability of any urban waterfront project. They published the ten principles on the following website: http://www.ware-project.net/index.php?option=com_content&view=article&id=30:10-principles-for-a-sustainable-development-of-urban-waterfront-areas&catid=8:resources&Itemid=60 .

The ten principles are:

- Principle 1 – Secure the quality of water and the environment
- Principle 2 – Waterfronts are part of the existing urban fabric
- Principle 3 – The historic identity gives character
- Principle 4 – Mixed use is a priority
- Principle 5 – Public access is a prerequisite
- Principle 6 – Planning in public private partnerships speeds up the process
- Principle 7 – Public participation is an element of sustainability
- Principle 8 – Waterfronts are long-term projects
- Principle 9 – Revitalisation is an ongoing process
- Principle 10 – Waterfronts profit from international networking

7. The Sustainability of the V&A Waterfront Project

These ten principles have been applied to the V&A Waterfront Project in order to evaluate the key success factors and the sustainability of the project.

7.1 Principle 1 – Secure the quality of the water and the environment

The V&A Waterfront has retained the authentic working harbour character as part of the project's development programme and the adaptive re-use of the historic old dock buildings has created special character and ambience.

A sustained environmental management programme has ensured that the V&A Waterfront's harbour basins are cleaned on a regular basis to remove wind-blown refuse and tidal debris from the water. Resident V&A Waterfront seals have become an environmental attraction in their own right.

However, combined with the theatre of movement provided by pilot boats and tugs, as well as pleasure craft that provide charter trips on the bay, the sight and sound of a commercially working harbour environment is a never-ending source of attraction and entertainment for the visiting public.

7.2 Principle 2 – Waterfronts are part of the existing urban fabric

The V&A Waterfront was conceptualised by the V&AW and the City of Cape Town as an integral extension of the Cape Town's CBD and has contributed in a marked way to the revitalisation of the downtown during the past fifteen years. The V&A Waterfront is being developed in accordance with its unique location against the spectacular backdrop of Table Mountain. A sustainable planning and development vision was formulated that captures the unique selling features of the project, as well as the iconic location.

7.3 Principle 3 – The historic identity gives character

The collective heritage of the water, the historic dockland buildings and the unique working waterfront ambience has been integrated to provide an authenticity which has avoided a 'theme park' development – Cape Town's Waterfront is a real place. The preservation of the industrial past is an integral element of the sustainable development. A key success factor of the project, and arguably the most critical, has been to value what was already there and to employ adaptive re-use techniques in the design and tenancing of the buildings and their integration as key elements in the development plan.

However, as with any property investment, the primary reason for the successive shareholders' ownership of the V&A Waterfront is to earn a return on the capital invested. All other benefits that may accrue, such as the restoration of the historic buildings and structures, and the value of the V&A Waterfront to the Cape Town economy, will be relevant to the shareholders only if they continue to add value to their investment.

7.4 Principle 4 – Mixed use is a priority

The V&A Waterfront has been developed with a view to creating a mixed-use property portfolio with residential, retail shops, offices, entertainment, hotels and industry all co-existing side by side, in a controlled environment. Development and investment focus has been created through anchor projects with critical mass that has established the property's mixed-use development concept. Likewise, the focus on tenancing the various buildings has been on establishing a high impact mix of entertainment facilities, which includes shops, restaurants, cinemas and museums, as well as special visitor attractions (such as an aquarium, tourism and visitor centres), offices and residential apartments. A robust retail and entertainment tenant selection programme ensures a diverse and vibrant activity mix – this is essential in order to retain market share and sustained growth, leading to the financial success of the development.

An important ingredient for commercial success is that a waterfront project should ideally have a single management structure. It is essential that there be centralised control over the tenant mix and the variety of activities or uses. In the case of the V&A Waterfront, the retention of the property as a single management unit under the control of one owner has prevented any potential conflict that could have occurred if the property had been subdivided and sold to several owners.

The V&A Waterfront's experience has also been that the project should be market-driven in order to be commercially viable and therefore economically sustainable – the V&AW has never had the benefit of any national or regional government subsidies or special project grants.

7.5 Principle 5 – Public access is a prerequisite

The V&A Waterfront is both physically and visually accessible to locals and tourists of all ages and income groups. The property has good vehicular access and adequate public parking (over 8,500 parking bays). The V&AW has exceeded its target modal split of 30% for public transport and non-motorised transport (walking and cycling) – the weekday morning peak achieves 42% and the afternoon peak period 35%. This has been achieved through a sustained encouragement of public transport by the V&AW, through the provision of infrastructure such as tour coach holding areas, sedan and mini-bus taxi ranks, a bus station and high quality pedestrian corridors and routes that link the CBD through the various V&A Waterfront precincts to the quayside edges, public squares and promenades.

This high level of public access also underpins the commercial success of the V&A Waterfront project. Public visitorship since the commencement of trading at the V&A Waterfront at the end of 1990 far exceeded the initial expectations. The project has had sustained high levels of visitorship for over 22 years and the V&A Waterfront has now become Africa's most visited destinations, with an average annual visitation of over 22 million people.

Extended trading hours for businesses and visitor attractions offer special visitor appeal and also allow tenants such as restaurateurs to trade beyond the traditional lunch and dinner time, which increases turnover and smoothes out peaks and valleys in trading patterns. The V&A Waterfront pioneered extended trading hours in South Africa, from 09h00 to 21h00, seven days a week. This is strictly enforced in terms of the tenants' lease agreements.

The V&A Waterfront strives not to be a tourist trap where Capetonians and local patrons feel alienated. Recognising the need to cater for both the local and tourist markets, the V&AW believes that visitors will seek out the places favoured and frequented by locals. One of the management strategies employed to ensure repeat visits by the local population has been the V&AW's sustained programme of special events and promotions. This is essential in order to retain market share and the repeat visitation of the locals, which is a requirement for sustained commercial growth. The V&AW also places a high premium on safety and security of property and visitors alike.

7.6 Principle 6 – Planning in a public/private partnership speeds up the development process

Since its origins in 1860, the Port of Cape Town has been the scene of excavations, reclamation, harbour construction programmes and land based developments. Over the past 153 years, the harbour has undergone numerous changes and today that process is continuing with the redevelopment of land and buildings surrounding the original Victoria and Alfred Basins. The V&A Waterfront project was the culmination of nearly three decades of planning and development proposals.

In the case of the V&A Waterfront the respective roles for the public and private sectors were clearly defined from the outset. The Cape Town City Council was the enabling, statutory local authority responsible for the urban planning approvals and the provision of municipal services up to the boundary of the development site. The V&AW, as the landowner and developer, was responsible for the planning, design, development and management of the waterfront project.

However, the City of Cape Town made an enormous contribution in terms of its planning support for the project, by agreeing to establish a flexible urban planning approach to land use management – referred to as the “*Package of Plans Process*”. This was a critical factor during the project’s initial start-up period, as well as during the ongoing development programme. This unique urban planning framework, with its flexible use rights, allows the development plan to be adjusted over time to meet changing market demand. The “package” or hierarchy of plans typically consists of the following plans and policy documents: Contextual Framework, Development Framework, Precinct Plans, Site Development Plans and Building Plans.

At the commencement of the project in 1990, the City of Cape Town’s then Deputy City Planner, Peter de Tolly, noted the following as the City’s key objectives for the V&A Waterfront project and the “Package of Plans” planning approach:

“Cape Town’s Central Waterfront is one of the chief potential amenities and economic resources of the City and the region. Council’s overarching goals for the Central Waterfront are to promote increased public enjoyment and use of the area and to promote economic development and job creation by ensuring that future developments and activities will help to achieve the following objectives:

- *Increase the physical, perceptual, functional and jurisdictional integration of the Central Waterfront with the rest of the City, for all segments of society.*
- *Increase public use and enjoyment of the Central Waterfront by extending the richness, diversity and activity of City life to that area, through new residential, institutional, recreational and commercial development.*
- *Increase and improve public access and open space along the water’s edge and within the Central Waterfront.*
- *Promote economic development and job creation in the Central Waterfront through development in the fields of tourism and recreation, financial services, commerce and light industry.*
- *Protect the role of existing compatible land uses and public utilities in the Central Waterfront as a source of industrial and commercial income and jobs.*
- *Provide aesthetic, environmental and infrastructural improvements.*
- *Promote public/private sector cooperation to achieve financial viability and development of underutilised assets.*

“The Package of Plans approach as developed and used by the City of Cape Town has been designed to serve and reconcile the key interests of each of the public and private sectors. Properly undertaken, the Package of Plans approach should provide both strategic direction and operational flexibility and result in a development of quality and appropriateness, which takes full account of its special location, conditions, environment and history, and which becomes integrated over time into its adjoining city. It will ensure that development derives from a public-private partnership which brings together the relevant government agencies, local authority and private sector investors, developers and publics and which has reconciled and achieved their respective interests.”

The historic cooperation between the City of Cape Town and the V&AW has enabled the City to achieve its Central Waterfront development goals and objectives and the V&AW to realise a commercially successful project.

The V&AW continues to act as the developer of the V&A Waterfront project and also as the property manager – managing the site in terms of tenancing, security, cleaning, maintenance, marketing and administration. Tenants are secured by way of leases ranging from monthly to 99-year lease periods. The V&AW must ensure that real value is added with each investment and that there is continued overall growth in the total investment under management.

The V&AW is responsible for monitoring the pace of development and new buildings are only put up in response to market demand. The rate of development has not been governed by a capital expenditure budget, but by the dictates of the market as interpreted within the guidelines of the overall vision and development plan. A key aspect of the development strategy was the decision to avoid random growth by concentrating the initial development – the V&A Waterfront's initial development was concentrated in the Pierhead Precinct and the project '*started small in the biggest possible way*'. It has grown from there in the most integrated way possible.

7.7 Principle 7 – Public participation is an element of sustainability

The preparation of the V&AW's original Development Framework in 1989 ran in parallel with detailed traffic and infrastructure analyses and was the subject of extensive public participation. City officials from all departments, including finance, engineering, building survey, traffic and transportation and urban planning, were also involved in the process. Public participation included meetings with the local Member of Parliament, City Councillors, public officials, various business organisations, conservation bodies and professional associations. There was also extensive coverage of the draft Development Framework in the local press and media, therefore giving adequate opportunity for the public to express their views before the V&AW was granted its development rights by the local authority.

In addition to the above processes, the V&AW also established and voluntarily maintained a Waterfront Liaison Forum for the first seventeen years of the project. The Forum, comprising of 25 civic, business, conservation and professional non-governmental organisations, reviewed and commented on all major developments in the V&A Waterfront between 1989 and 2006. Another V&AW-initiated review group, the V&AW Design Review Committee, also made a significant contribution to the design quality and success of the V&A Waterfront project, including the urban design, architectural design and landscape design.

Cities should benefit from waterfront development not only in ecological and economical terms, but also socially. International best practice indicates that a crucial part of the enduring success of any waterfront development is the hosting of a sustained programme of entertainment and special events. The V&A Waterfront hosts large-scale events like the series of weekly concerts during the summer season provided by the Cape Town Philharmonic Orchestra, as well as the annual Waterfront Jazz Festival.

These free concerts are immensely popular and draw up to five thousand people who gather at the Waterfront Amphitheatre. There are also regular choir performances as Cape Town has a tradition of choral singing, as well as jazz concerts and appearances by international and local artists.

Buskers, which include street musicians, dancers, acrobats, mimes, jugglers and magicians, also provide an important entertainment drawcard. They are initially auditioned by the V&AW and for those who qualify to perform, the V&A Waterfront has become a source of continued employment as well providing, in some cases, an opportunity for furthering their entertainment careers.

The V&A Waterfront, as a Western Cape tourism industry leader, strives to complement the Cape's other attractions by promoting assets such as the wine, flower and fruit industries, both in terms of annual special events and with appropriate speciality shops and restaurants. The annual Waterfront Wine Festival is a calendar highlight.

7.8 Principle 8 – Waterfronts are long-term projects

In terms of ensuring long term sustainability, waterfronts need to be (re)developed in a planned and integrated manner and must also respond to market potential and demand. This ensures that the entire City benefits from the strategic potential of the waterfront resource. Most waterfront projects are very large in scale and impact and therefore the development objectives should be realizable in terms of long term economic cycles and not just with short-term gains and interests in mind.

The V&A Waterfront project entails the redevelopment of a 123 ha property, with almost 604,000 m² of development rights ("bulk"). By the end of 2012, 22 years after construction on the project was started, about 60% (nearly 364,000 m²) of this development entitlement had been implemented. During the period 2006-2011 the property twice changed ownership and the global economy experienced a downturn of crisis proportions. It has now been estimated that the V&A Waterfront is likely to be fully developed by 2023 – some 35 years after the project was launched in November 1988.

7.9 Principle 9 – Revitalisation is an ongoing process

The redevelopment of waterfronts is a highly complex task that involves professionals from many disciplines. The initial master planning of the V&A Waterfront project was undertaken by a multi-disciplinary team comprising of urban planners, urban designers, market researchers, urban economists, environmentalists, architects, landscape architects, quantity surveyors, urban conservationists, marine engineers, civil and electrical infrastructure engineers and structural engineers. A development vision was formulated which formed the basis of the 1989 Development Framework. As previously noted, the flexibility of the "Package of Plans" planning approach has enabled the development programme and the urban planning to respond to the changing market demands and trends over the past 24 years. This flexibility has facilitated the regular review and application of the original vision for the project and the rejection of financial expediency, which could easily have sidelined this vision.

The V&AW has been responsible for the planning, development and management of the V&A Waterfront project in Cape Town since 1989. During the past 24 years the V&AW Management Team has developed strong capabilities and experience on waterfront and marina projects, based on the disciplines of market research, planning, architectural design, construction management, leasing, marketing and property management.

7.10 Principle 10 – Waterfronts profit from international networking

The exchange of knowledge through an international network of waterfront developers and operators offers support and information about the most important projects being completed or underway. The V&AW has established an extensive network of international project associates and through regular contact and repeat visits to these projects, the latest trends in waterfront and marina design, development and management strategies are monitored and incorporated into V&AW projects.

In the early 1990's the V&AW benefited from visits to San Francisco, Boston, Baltimore, Vancouver and Sydney. Probably the biggest lesson learnt in this review of international waterfront projects is not to look for the quick-fix solution or to adopt a formula that may have worked somewhere else. The V&AW has consciously strived for distinctiveness as it has undertaken the challenge of converting and conserving Cape Town's waterfront resources. Learning from the successes and failures of other pioneering international waterfront projects contributed to the V&A Waterfront being successful. Today, the success of the V&A Waterfront project has made it an international benchmark in its own right.

8. Conclusion

What was a loss-making asset for the owner of the Port of Cape Town in 1988, has become a vibrant and profitable property development project that enjoys an enviable international profile. The charter agreement between the V&AW and the City of Cape Town started with a simple goal: *“To make the V&A Waterfront a very special place for all Capetonians”*.

Twenty-five years after the adoption of this important civic developmental goal, it is clear that the V&A Waterfront project has succeeded admirably in achieving this goal in a sustained way.

The V&A Waterfront is not a theme park – it is a real working harbour, but with a difference. The dry dock and ship repair facilities, the fishing industry and the harbour operations, tugs and pilot boats all contribute to providing a theatre of movement for the visitors and assist in ensuring that it functions as a real peoples' place. There are promenades, piazzas, squares and landscaped gardens which create vibrant spaces in between the pubs, restaurants, shops, cinemas, museums, offices, hotels and residential apartments.

A key success factor of the project, and arguably the most critical, has been to value what was already there before the urban revitalisation project started and to employ adaptive re-use techniques in the design and tenancing of the buildings and other structures and elements of heritage value.

Although it has become Africa's top tourist destination, the V&A Waterfront has achieved much more than that – it has re-united Cape Town with its proud maritime heritage. The success of the V&A Waterfront project has placed Cape Town on par with other international waterfront cities such as San Francisco, Boston, Baltimore, Vancouver and Sydney, which are all highly liveable cities and major tourist destinations.

Endnote

Between 1990 and 2007 the author was the first Planning and Development Executive and member of the management team that developed the V&A Waterfront Project in Cape Town into one of the world's foremost mixed-use waterfront projects. His management responsibility at the V&AW was to integrate the project conceptualisation, urban planning and urban conservation aspects of the V&A Waterfront Project, to obtain the statutory planning, environmental and heritage approvals from the various Government authorities, as well as to manage the development of the retail, commercial, industrial and hotel projects in the V&A Waterfront. During this period he oversaw a development portfolio of ZA Rand 2,5 billion. Between 1998 and 2005 his professional experience with the V&AW also included work as an advisor on a number of international waterfront projects. He travelled extensively to study international waterfront, residential marina and urban revitalisation projects, with a focus on city planning, urban design, urban conservation and city management. The views expressed in this paper are those of the author and do not necessarily represent the views of the Western Cape Provincial Government.

References

The following is a selected reference list of publications that assisted in the background context for this paper. It is not an exhaustive list, but the references cover the wide spectrum of issues that need to be considered in developing urban waterfront projects.

Breen, Ann & Rigby, Dick (1994), *"Waterfronts – Cities Reclaim Their Edge"*, McGraw-Hill, Washington DC.

Breen, Ann & Rigby, Dick (1996), *"The New Waterfront – A Worldwide Urban Success Story"*, Thames and Hudson.

Birkby, Rory (1998), *"The Making of Cape Town's Victoria & Alfred Waterfront"*, Cape Town: Victoria & Alfred Waterfront (Pty) Ltd.

Bruttomesso, Rinio (Ed) (1991), *"Waterfronts: A New Frontier for Cities on Water"*, Venice: International Centre for Cities on Water (*Centro Internazionale Città d'Acqua*).

Hall, Peter (1992), *"Waterfronts: A New Urban Frontier"*, *Aquapolis*, Vol. 1/92, 6-16.

Urban Land Institute (1987), *"Urban Waterfront Development"*, Washington DC.

Urban Land Institute (2004), *"Remaking the Urban Waterfront"*, Washington DC.

Websites

www.waterfront.co.za Victoria & Alfred Waterfront, Cape Town, South Africa.

www.waterfrontcenter.org The Waterfront Centre, Washington DC, USA

www.ware-project.net Waterfront Regeneration (WARE), Venice, Italy

www.un.org/esa/sustdev UN DESA Division for Sustainable Development

en.wikipedia.org/wiki/World_Commission_on_Environment_and_Development

Analysis of the Spatial Characteristics of Commercial Streets in China's Southern Cities:

A Case of Three Commercial Streets in Suzhou

(The Spatial Characteristics of Commercial Streets in China's Southern Cities)

Gang WEI, Zhaohui JIANG,
China Academy of Urban Planning and Design, Beijing, China

1. Introduction

1.1 *Urban Identity Crisis*

In the context of globalization, information transmission and cultural dissemination have been quickening their speed. Starting from the modernism in 1920s, they have exerted significant influence to the architecture, landscape and urban construction of various countries and localities. Concise and easy-duplicated geometric shape, building material with high productivity and modulation, and the rapid assembled construction mode enabled the cities at different localities have similar features, but city characteristics was weakened with each passing day. In 1999, the Union Internationale des Architectes (UIA) showed its concern to the dilemma faced by cultural and regional characteristics in the Beijing Chapter, afterwards which the issue of city characteristics led to more and more concerns and practices.

In the past decades, China's urban construction has experienced a rapid development stage of growing out of nothing, whereas in recent years the resource restriction, changes of industrial types, and the increase of the people's cultural quality called for transition of the city. In future competition and development, cities need to find their positions, highlight prominent features and form differences, so as to win a better development space.

At present, many cities in China have recognized the importance of city characteristics, yet when it comes to materialized space there may exists some bias, resulting in improper construction activities such as removing real historic relics while building *fake antique* and blindly building small towns with exotic atmosphere. These activities not only create unpleasant physical environment, but also waste and damage resources. To this situation, the author upholds that Suzhou has something worthwhile to contribute the shaping of city characteristics. Through field investigation and research analysis in the characteristic commercial street in Suzhou, it can be seen that urban characteristic commercial streets of high quality plays positive roles to various aspects of the city, and deserves being studied.

1.2 *The Concept of Urban Characteristic Space*

The differences between *city feature* and *city characteristics* are quite obvious. *City feature* emphasizes the internal and external expression of the cities, rather than the distinctiveness. Every city has its own style and features, regardless of good or bad. The expression of *thousand cities with one feature* is often seen in Chinese media, which refers the fact that the features of many cities are roughly the same; but *city characteristics* emphasizes internal and external differences of the cities, and the environment corresponding to the distinctiveness of the city, including natural environment, cultural environment and social environment.

The city's materialized space is an important carrier of city characteristics, and specific city characteristics can be recognized by using the urban space. To put it simply, *urban*

characteristic space is the space that can reflect city characteristics. To grasp the urban characteristic space, there is not only the need to take a look at the *surface* of the distinctiveness, but also the need to look at the *inside* of natural, cultural and social environment reflected from behind. Thus, urban characteristic space shall be the urban public space which can harmoniously coexist with natural environment, and reflect the characteristics of local culture and the history.

1.3 Characteristic Commercial Streets in Suzhou

Suzhou is one of the first-batch historic cities, and is also a modern city with fast economic development. In recent years, many urban characteristic spaces have been emerged in various places in Suzhou. Among the urban characteristic spaces of various types, characteristic commercial street is not only an important place to serve the general public and pool talents, but also a platform to display the essence of urban construction and the epitome of urban development, exerting important influence in urban development.

As a representative urban characteristic space, the characteristic commercial street functions as the parlor and business card for a city. The three characteristic commercial streets in Suzhou—Ping Jiang Road, Shan Tang Street and Li Gong Di are widely known. From 2009 to 2010, with their own prominent features, these three commercial streets were rated as *National Street*, with great importance of demonstration. With different resource endowments, the three commercial streets choose different path of development, which can be summarized and compared as follows (Table 1).

Table 1 Comparison on developing modes of Ping Jiang Road, Shan Tang Street and Li Gong Di

Classification	Characteristic commercial street	Type of planning and redevelopment
Historical block + Creative culture	Ping Jiang Road	Protectively renovating and transforming the historical and cultural block, protecting and retaining the characteristic style and features, and inviting outside investments step by step
Historical block + Scenic spot	Shan Tang Street	Protectively restoring and transforming the historical and cultural block, protecting and reshaping the characteristic style and features, and inviting outside investments one-time
Natural landscape + Characteristic commercial activities	Li Gong Di	Developing commercial real estate of the scenic spot, reestablishing and reshaping the characteristic landscape, style and features, and inviting outside investments one-time

2. Spatial Attributes of Urban Characteristic Commercial Street

By studying the three characteristic commercial streets in Suzhou, the paper summarizes four spatial attributes of the urban characteristic commercial street.

2.1 Publicity

Publicity is a prerequisite of realizing characteristic spatial functions. As an important part of the urban public spatial system, urban characteristic commercial street is the space with convenient access and free activities. Thus, it's often in inner part of urban functions, with more concentrated cultures, frequent commercial activities and unique landscapes.

The three characteristic commercial streets selected in the paper are all of this kind. Ping Jiang Road is adjacent to the municipal commercial center of GuanQian Street; Shan Tang Street is located outside the old town of ChangMen and adjacent to the lower-level

commercial center of ShiLu Pedestrian Street; and Li Gong Di is located at the northwest of Jinji Lake of the Industrial Park, belonging to an important part of Central Business District Around the Lake, and adjacent to the Huxi CBD. The three characteristic commercial streets all enjoy convenient transportation, especially public transportation, which ensures better publicity.

2.2 Difference

The *difference* of urban characteristic commercial street can be reflected in the following two aspects.

The first aspect is the difference compared with other space. Characteristic commercial street often has one or more unique spatial and functional elements, e.g. natural landscape, historical site or unique functions (like pedestrian-friendly, concentration of specific commercial activities, etc). In addition, the space of characteristic commercial street often has high artistic and aesthetic values.

The second aspect is the difference compared with other geological space. The big geological difference can be the East and the West, the northern China and Southern China, Southwestern China and Southern part of China, etc.; the small geological difference can even be *ten miles cover different style, and hundred miles cover different customs*. The different geological urban space may also have varied features due to the differences in cultural background, geography and weather. Previously, geological different is natural, and only the wave of globalization reduced the geological difference. Now, we need to consciously protect geological difference.

From these three characteristic commercial streets, it can be seen that Ping Jiang Road and Shan Tang Street have profound historical background, with intact spatial pattern, relatively unified architectural features, numerous historic relics with historic preservation, and prominent historical resources compared with ordinary urban places (Figure 1). Although Li Gong Di has less prominent historical origin compared with the first two commercial streets, it is situated at the lakeside of Jinji Lake, as the only long beach of the lake, with broadened horizon, ripples, beautiful scenery, and unique natural resources.



Figure 1: Distribution map of historical and cultural heritage in Pingjiang Historical and Cultural Block

Figure courtesy: <http://www.suzhou.gov.cn/>

2.3 Reflection

The *reflection* of urban characteristic commercial street is mainly shown in the three aspects. The first aspect is the representation of natural environment, i.e. the reflection of space to such natural features as landform and hydrology. The second aspect is the representation of historical culture, i.e. the reflection of space to regional cultural background and local historic culture. The third aspect is the representation of the characteristics of times, i.e. the reflection of space to modern functions, modern technologies and creative thinking.

If the urban commercial street can reflect one of the above aspects, it will be excellent. And if it can reflect these three aspects at the same time, it will be perfect. The three characteristic commercial streets in Suzhou reflect the three aspects at varied degrees.

So far, Pingjiang Historical and Cultural Block is an area with utmost integrity in Suzhou ancient town. Compared with the Pingjiang Map (Figure 2) at Song Dynasty, the Block basically follows the layout since Tang and Song Dynasties, with the corresponding names of most of the streets, watercourse and bridges. The historical features of the Block, with such historical relics as moat, wall, watercourse, bridge, street, dwellings, gardens, club house, temple, ancient well, ancient trees and memorial archway, all reflect the characteristics and values of Suzhou ancient city, especially the urban pattern of *double chessboard* with land and water, which is specifically reflected in Pingjiang historical block, and referred as the epitome of Suzhou ancient town. The modern cultural-recreation-oriented investment attraction enabled the old street to show fashionable and modern features.

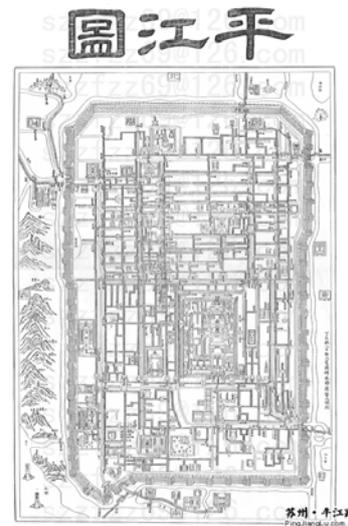


Figure 2: Pingjiang ancient map

Figure courtesy: <http://www.pingjianglu.com.cn/>

Shan Tang Street was established in 825, with a history of 1282 years. It is adjacent to the ancient town of Suzhou, with Chang Men mentioned in the novel of Dream of Red Mansions in its east, and *the First Scenic Spot of Wuzhong Tiger Hill* in its west. It was build when the poet Bai Juyi served as the feudal provincial governor in Suzhou, and in history it has many shops, gardens and villas, with a thousand of dwellings by the riverside and gaily-painted pleasure-boat and playing and singing throughout the four seasons. Hilly Pond in former Times is the best place for residents of Suzhou to enjoy outskirts recreation, with rich and colorful material relics and precious historical origin. Till now, it's still featured by Suzhou specialties and old and famous shops, and receives warm welcome from the tourists.

Li Gong Di is the only long beach of Jinji Lake in Suzhou, which is the biggest lake of inner city, with a length of 1400 meters. During the Guangxu years, it was build by the then county magistrate Li Chaoqiong, who organized the people to build the long beach and planted the willows at the beach to consolidate the dike. This long beach was called Li Gong Di by the later generations, and became the excellent spot of Jinji Lake. Now, through three-phased development, it has formed the commercial features by taking catering of various style, characteristic bars and cultural industries as the main part (Table 2).

Table 2 Comparison of featured resources of Ping Jiang Road, Shan Tang Street and Li Gong Di

	Natural resources	History-related resources	Planning and positioning	Graphical representation
Ping Jiang Road	The outer city river has few effects on the view, the inner part is the small scale river system in chessboard type, but the water quality is found bad during the survey.	It has profound historical origin, intact pattern, with many famous people and former residences of celebrities, and rich history-related resources	Rationally utilizes the historical and cultural resources of the block, develops the tertiary industry with cultural connotation and high quality, and makes it to be urban vitality belt with unique cultural landscape	

<p>Shan Tang Street</p>	<p>Land and water running parallel, with Tiger Hill in the west. Natural resources are excellent, but the water quality of core commercial section is bad.</p>	<p>Having a long standing reputation in history, with numerous allusions, historical sites along the way, and rich history-related resources</p>	<p>As the epitome of old Suzhou, window of Wu Culture, street in heaven ; having unique <i>water street of ancient city</i></p>	
<p>Li Gong Di</p>	<p>The only long beach of Jinji Lake, with water fronts at both sizes, landscape is beautiful, natural resources are rich</p>	<p>Has certain historical legend and allusion, but with no historical relics, history-related resources are relatively in sufficient</p>	<p>International-featured commercial water street, integrated with featured catering, sightseeing, recreation and culture ; recreation bars, entertainment, dynamic area ; pro-water Street Mall</p>	

2.4 Artistry

As a carrier of widest public activities, urban characteristic commercial street needs to satisfy the public aesthetic requirements, enabling the people to have physical and mental pleasure and gain resonance and inspiration towards aesthetics. Wide and in-depth public participation is the effective channel to solve the public aesthetics. In addition, the artistry of urban characteristic commercial street has the property of participation. Along with the time and the participation of the users, urban space will accumulate more artistic connotation.

During the protection and renovation, Pingjiang Historical and Cultural Block insists on the four principles of *authenticity, integrity, interpretability, and sustainability*, trying to respect the original historical environment and retain structure frame and restore the interior and exterior to retain the historical rudiment of renovation. At present, the constructions of both sizes of Ping Jiang Road have proper scale, unified architectural style and the antique flavor of architectural material and detail, forming sound historical architecture feature (Figure 3).



Figure 3: Ping Jiang Road Photos

During the protection and renovation period, Shan Tang Street adopts the principle of *rescue comes first and taking protection as the main purpose and restoring the old as the old* to renovate the constructions along the Shan Tang Street. The survey found out that compared with Ping Jiang Road, the constructions of Shan Tang Street have some changes before and after the renovation, in order to satisfy the demand of commercial development and tourism development. Yet, at present, the overall construction still has strong historical features, with unified style and sound features(Figure 4).



Figure 4: Shan Tang Street Photos

Before development and construction, Li Gong Di has not so many historical relics. During the planning and design of first phase, it introduced classical and traditional architectural space symbols by learning from the traditional construction and environment shaping methods, and applied modern means to express, forming the modern Suzhou-style construction featured by whitewashed wall and black tiles and small bridge over flowing stream; the construction style of second phase is the same as that of the first phase, with construction style, color and material more modernized and having traditional features; the third phase adopts modern European style construction feature, to satisfy the requirement of comprehensive environment feature (Figure 5).



Figure 5: Li Gong Di Photos

3. Values and Significance of Urban Characteristic Commercial Street

The four spatial attributes of the urban characteristic commercial street determine the most essential part of city space. These locations are always the most concentrated and advanced place of various urban economic, social and cultural activities. The values and significance of the urban characteristic commercial street are all-around.

3.1 Economic Aspect : Source for Raising and Stimulating City Vitality

The significance of urban characteristic commercial street to urban economy can be reflected in two aspects. Firstly it can strengthen a city's competitiveness. Given the attractiveness and cohesion resulted from the featured advantages that are suitable for commerce and tourism, the characteristic commercial street becomes favorable capital of urban competition. At the same time, the characteristic commercial street is always the carrier of such emerging economies as urban tourism economy and creative economy. Take Tianzifang old block for instance, it attracts a great many of creative talents and creative activities.

Secondly it stimulates regional development potential. By its own development, urban characteristic commercial street can play the role of catalytic agent, activating the potential of surrounding blocks and cities from point to area, becoming the business card of the city and putting forward the development of the whole regional economic development of the city. Since the southern cities of China have rich water resources, enhancing the city vitality and reviving urban economy by renovating water front districts means to utilize the advantage of easy formation of the characteristic commercial street in the water front districts.

Before the development, the three characteristic commercial streets at Suzhou have all carried out commercial planning and design, invited outside investments according to the development orientation, and formulated relevant investment attraction threshold. Along the commercial streets there are basically commercial and cultural facilities (Figure 6). By comparative research, it found that all of the three commercial streets have concentrated and featured commercial activities, although the types of commercial activities and concentration degree are varied (Table 3).



Figure 6: Chart on current land usage of Ping Jiang Road, Shan Tang Street and Li Gong Di

Figure courtesy: <http://www.suzhou.gov.cn/>

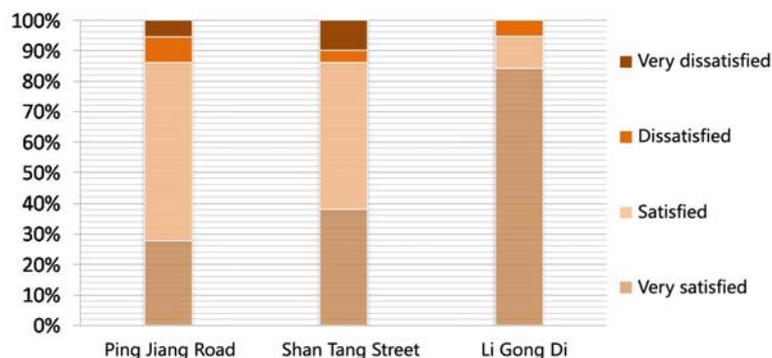
Table 3 Comparison of commercial activities of Ping Jiang Road, Shan Tang Street and Li Gong Di

	Ping Jiang Road	Shan Tang Street	Li Gong Di
Component ratio			

In terms of commercial activities, in Ping Jiang Road and Shan Tang Street, the commercial retail takes 54% and 64% respectively, followed by catering industry and cultural facilities, in Li Gong Di the catering industry takes 63%, then commercial retail with 12%, and cultural facility 12%. In terms of the scale, the commercial space of the three characteristic commercial streets have reached the scale of district-level commercial center, and become important component of urban public commercial service system.

At present, the three commercial streets operate smoothly, with sound revenue and relatively high satisfaction of the operators, all above 85% (Table 4). Furthermore, since Ping Jiang Road is located at the old town of Suzhou, it has close relationship with the residents of surrounding communities. 44% of the residents of surrounding communities of Ping Jiang Road upheld that the development of Ping Jiang Road increased employment opportunities of the residents, 37% upheld that their income has been increased. Thus, the urban characteristic space represented by the characteristic commercial street can promote the economic development of surrounding areas to a certain extent.

Table 4 comparison chart of operators' satisfaction



3.2 Social Aspect: Public Place for Concentrating and Recognizing Collective Memory

As public space, the urban characteristic commercial street is an important place for citizens and tourists to have public activities and exchanges. During the long process of being material carrier of social activities, it fully represents the social relations and ethical order of the times, with sense of belonging and identity to the city. To China, a country with rapid urbanization, the characteristic commercial street has been a patch of pure land to stick to urban collective memory.

The elegant and amiable sceneries, quiet and comfortable atmosphere and the varied recreational commercial activities enabled the three characteristic commercial streets in Suzhou to be not only bustling and busy streets, but also places for recreation and get-together. According to the survey questionnaire to Ping Jiang Road and Shan Tang Street, "love of historical and slow life style" is the main reason for the residents to choose here.

3.3 Cultural Aspect: Vigor Highland for Inheriting and Developing City Spirit

The famous remark *once I take a look at your city, I will know the pursuit of its people* reveals the material spatial environment of the city actually reflects the internal culture and spirit of the city. The aesthetic taste toward the elements of the space, the attitude towards historical relics, and the considerations of people's usage demand reflect the taste, connotation and

values. As a representative place of the urban space, the characteristic commercial street is the concentration place of the city's culture and spirit.

The three commercial streets in Suzhou have their own features in cultural cultivation. The historical spatial layout and environmental advantages of Ping Jiang Road are very outstanding. Thus, in the continuation of historical culture, it mainly needs to protect the historical environment and cultivate real historical atmosphere, and introduces such cultural facilities as the museum of storytelling and ballad singing in Suzhou dialect and the museum of Kunqu opera(Figure 7).



Figure 7: Museums on the Ping Jiang Road

Shan Tang Street is famous in history, with numerous allusions, hence the exploration and utilization of its cultural connotation is the priority of renewal. The exploration of folk culture mainly needs to actively introduce the local featured handicraft (such as embroidery, Suzhou-style fan, wooden carving, stone pot making, etc), set up restaurants with authentic Suzhou cuisine and the venues for listening to story-telling and ballad singing in Suzhou dialect, and organize the folk activities including celebration of Lantern Festival.

The historical culture of Li Gong Di is the fewest among the three commercial streets, in terms of the continuation of history, it mainly explored and publicized historical stories, established the statue of Li Chaoqiong, set up monument and pavilion, and organized various activities related to the allusions of Li Chaoqiong to add colors to historical and cultural atmosphere.

3.4 Ecological Aspect: Ecological Space for Nourishing and Improving Environment

Many urban characteristic commercial streets are integrated with the natural ecological environment with local feature. Different natural ecological environment not only helped to establish various urban characteristic commercial streets, but also integrated the natural ecological elements to the urban life. It's an important component of urban ecological system. In terms of the big metropolitan with high density, close integration with the ecological featured space of urban daily life is of more outstanding significance.

Since the three characteristic commercial streets are all water front sections of the city, water environment is their important feature. Although the three waters are varied in properties and features, they all play positive roles to the ecological environment of the city (Table 5).

Table 5 Comparative analysis of water environment

	Ping Jiang Road	Shan Tang Street	Li Gong Di
Typical waterscape			
Features of water body	Small-scale net-shaped water body	Small-scale linear Water body	Large-scale faceted water body
Protection situation	Old watercourse is retained and the channels are regularly cleaned out, and the sanitary personnel are responsible for routine cleaning	Watercourse is intact, with waterways running through, and old watercourse has been continued	The lake surface of Jinji Lake and small Jinji Lake is intact and open, with exquisite scenery
Water quality	The waters are linked and run through the downtown, and water quality are ordinary	Affected by the machinery pleasure-boat and the surrounding commerce, the water quality is turbid.	Environmental protection is strict, water coverage is large, and water quality of the lake is fine
Picture			
Social evaluation	Fair	Ordinary	Fine

4. How to Shape Urban Characteristic Commercial Street

4.1 Grasp the Source of Characteristics of the Characteristic Commercial Street

By studying the three characteristic commercial streets in Suzhou, it can be seen that the “features” of the urban characteristic commercial street are reflected in three aspects: natural environment, local culture and herald of history.

4.1.1 Combining with the Natural Environment

Many cities have their own unique natural conditions and geological conditions. These are the bases of forming urban characteristic commercial street. On one hand, natural elements can be applied to form the landscape of the space. For example, the Hongyadong by the river-side of Chongqing River spreads tier upon tier according to the terrain condition, and transfers the terrain features to the features of construction and space. The Southern part of China is another example. It developed arcade-house to fit for the rainy and hot weather.

4.1.2 Keeping a Foothold at Local Culture

The display of local culture is an important source of spatial feature. Urban space shall consider the existing historical and cultural relics. These relics are non-duplicable precious wealth of the city. They not only provide historical reference, but also facilitate the cultivation and development of city spirit. Thus, protecting and utilizing the existing historical and

cultural relics is an important means to form the characteristic commercial street. For instance, the “Xintiandi” in Shanghai adopts the old house of Shikumen, and introduces the modern functions of the catering, shopping and entertainment to form cultural and recreational center of fashion and recreation. It needs to be noted that the protection and utilization of historical and cultural relics need to safeguard the originality of historical relics, pay attention to the coordination of accessory building, landscape planting and lightings to fit for the historical landscape, ensure smooth protection and renovation, and control the commercial activities.

4.1.3 Highlighting the Herald of History

The establishment of urban space cannot break away from the history. Of course, it shall reflect the characteristics of the history, and a featured space also needs to respond to the progress of the history. For example, the emerging industries were established to meet with the new requirements of social development, and they have brought new requirements to urban space. The book of *Rise of The Creative Class* indicates that creative class is more keen on the featured urban space with small blocks, small road networks, and small facilities at community level (café, bar, small-scale musical hall, small gallery, etc.). Only by fully understanding the characteristics of new functions, can we accurately reflect the appeal when forming the urban space, thus establishing the characteristics of the space itself.

Take another example, creative thinking is one of the driving forces of constant social progress. Naturally, urban space will have distinct features due to creative thinking and advanced ideas. Nowadays, the ideas on ecology, low-carbon and wisdom are changing today's urban space.

4.2 Establishing Sound Implementation Mechanism

Although urban public space is the main concern of urban design, the urban design results always fail to effectively realize it, and the *features* of characteristic commercial street may be distorted or disappeared. During the protection and renovation process, Ping Jiang Road and Shan Tang Street established separate companies with the financial support of the government, responsible for all the processes from transformation, investment attraction to management and maintenance at later stage. The Harmony Group with state-owned assets is responsible for the development and later-stage management of Li Gong Di. Since the elements of urban characteristic commercial street involves many departments, the establishment of a working mechanism that can coordinate various institutions in a unified manner will better guarantee the implementation of the *features*.

4.3 Receiving the Test of History

Provided that the newly built urban commercial streets grasp the source of “features” and effectively implemented it, they only enable the space to have the possibility of becoming *characteristic commercial street*, or possessing the *basis*. If they want to become featured space in real sense, they need to receive the test of the history, and constantly add rich urban activities. It's just like a museum which needs to constantly enrich the collections over the years. The reason why historical blocks are more easily to become characteristic commercial streets than newly built blocks is that they have abundant traces left from the long-time usage of the space, including renovations, facilities left by people's life exchanges, remnant and archway resulted from certain incidents at various periods, and even the people and events after the space. In this way, they can cultivate the taste of the space.

In addition, the bounty of heaven and earth can also endow the space with some poetic flavor. Wet slab stone path, mottled wall, obsolete doors and windows, or rusty bronze statue

with pigeon feces, glossy rubdown ashlar square, and antiquated red brick wall reflecting the lingering light of the setting sun. The traces of history endow these space with sentiment, enabling the people to feel the poetic flavor of the space.

5. Conclusion

Among the four attributes of *publicity*, *difference*, *reflection* and *artistry* of the urban characteristic commercial street, *reflection* is the soul, revealing not only the geological information of the space, but also the past and present cultural information of the space, and at the same time, representing the future development possibilities of the urban space. Hence, the feature of urban space originates from its natural environment, historical and cultural environment and creative thinking. To the people who are the subject of spatial feeling, apart from comfort and visual aesthetics, it's important to arouse the internal rich emotions. Those traces, details, stories and activities left by the time are the spirit to arouse these feelings, and it's necessary for the space to undergo the severe test of the history.

If urban space is said to be a container carrying urban civilization, what the urban characteristic commercial street carries is the most essential part of urban civilization. It not only represents the essence of urban civilization, but also witnesses the spreading of urban civilization.

References:

Florida, Richard (2002) *Rise of The Creative Class*, Basic Books

Liangyong Wu (2002) "Exploration of Urban Characteristic Aesthetics", *Urban and Rural Development*, No.1

Jin Duan (2002) "Recognition and Investigation of Urban Space Characteristics", *Modern Urban Research*, No.1

Taofang Yu (2004) "City Features, Competitive Advantages and Competitive Tactics", *Planner*, No.7

Weichun Rao (2007) "Construction of the Architectural and Urban Space's Cultural Characteristics", *Urbanism and Architecture*, No.9

Coordinating Strategy of Preserving the Local Identity during the Rapid Urbanization in China: Case Study of Three Towns in the South of Kunshan

Zhi Yang, Southeast University, Jiangsu Institute of Urban Planning and Design, China
Haibo Hu, Jiangsu Institute of Urban Planning and Design, China
Haiyong Wang, Jiangsu Institute of Urban Planning and Design, China

Accompanied by the rapid urbanization in China, the conflict between development and preservation has been reinforced, especially in the area of land use, environment resource and culture heritage. Recently, the preservation of local identity has been appreciated. This paper is aimed at exploring that how to preserve the local identity as well as achieve the economic development during the rapid urbanization. By the method of comparative analysis based on the data source and valuable resource evaluation, the coordinating strategy in historical conservation redevelopment, integrating space and policymaking has been proved to be effective.

1. Problems of local identity preservation in China

Since the reform and opening up in 1978, China has made great advancement in urbanization: the urbanization rate has soared from 17.9% in 1978 to 51.3% in 2011. During the development of economy, the townscape and living style has undergone tremendous change. The inheriting of traditional culture heritage is in deep crisis.

On the base of some current research on the problems of local identity preservation, especially about “whether development and preservation are opposites?”, we can find that there are several problems urgently needed to solve in coordinating the development and preservation. Then by referring to the description and analysis of the challenges of local identity preservation in China in “The theory and planning on the preservation of historic city” and “Urbanization and historic city”, we can sort the problems as follow.

1.1 Rapid urbanization brings the unregulated expansion

Facing to the rapid urbanization, many cities still use the traditional expansion model of single center, which excessively accumulates the whole function of living, working and serving. The accumulation of population causes the pressure of infrastructure and the extensive pattern of land use. Many kinds of “city disease” have arisen. Especially, the preservation of culture heritage and environment become more and more serious.

1.2 Motorization brings the destruction of traditional street model

The trend of urban traffic mechanization has a great impact on traditional bicycle traffic and pedestrian. In order to satisfy the need of high speed transportation, many traditional streets have been enlarged. Elevated roads and grade separations change the urban morphology and street texture. Furthermore, vehicles also maintain rapid growth in volume. The excessive motorizing development causes the degrading of the traditional space feature.

1.3 Homogeneity becomes a common phenomenon

“Characteristic crisis”, which was raised by the research of Zhou Ganzhi, Zhu Guanya, etc, proves to be a usual problem. Some cities borrow indiscriminately from other cities’

experience, which aspire to massive constructing. The townscape follows the same pattern. As a result, some characteristic cities and blocks are submerged in the monotonous new-built environment. Local identity has gradually vanished from the historic areas.

2. Valuing what already exists: case study of three towns in the south of kunshan

According to the research of “The Preservation and Protection of Historical and Cultural Cities in the Course of Urbanization”, the valuable resources of local identity include historical buildings, ecological landscape, culture reputation, and so on.

Kunshan, the top level of comprehensive strength among Chinese counties, is undergoing tremendous changes in economic development and urbanization. According to the master planning of Kunshan, it is divided into three parts, central agglomeration for urban development, northern resorts area around Yangcheng Lake, southern tourism area including watery historic towns. In the south of Kunshan, there are three national historic towns (Zhouzhuang, Jinxi and Qiandeng) in the range of less than 300 square kilometers, which is very rarely in China. There are many historic resources accumulating in this area. Meanwhile, this area is the most excellent district in the aspect of ecological environment, with densely lakes and rivers.

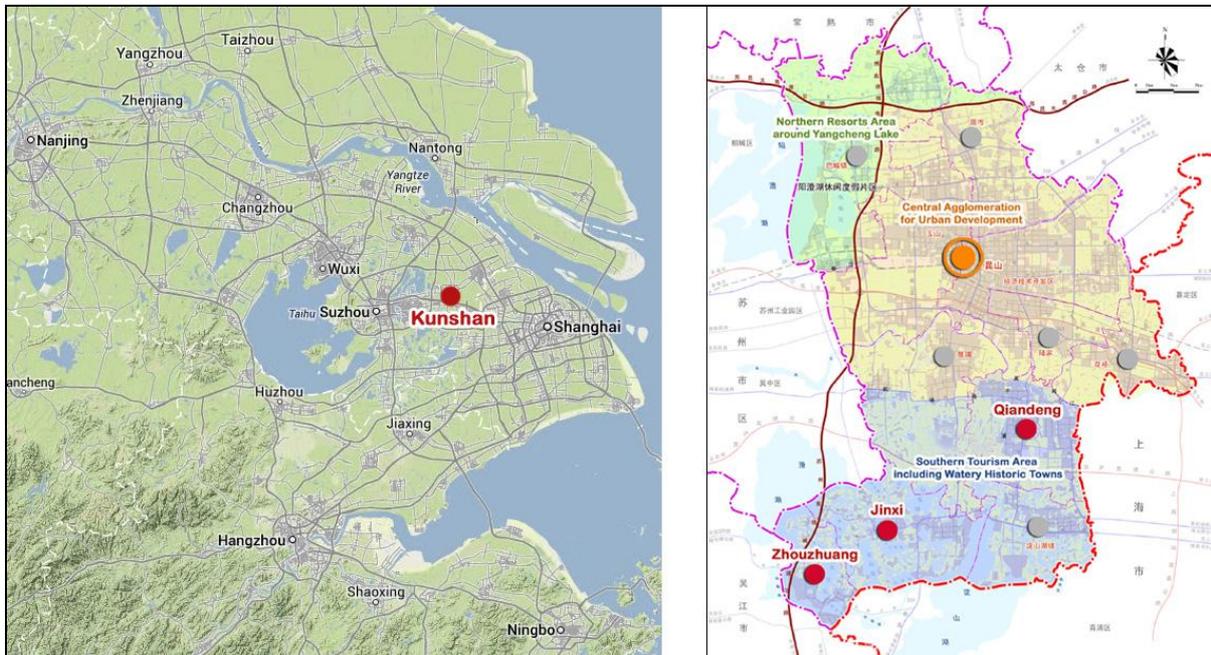


Figure 1: The location of Kunshan and the three towns
Source: The master plan of Kunshan

2.1 The contribution to traditional culture

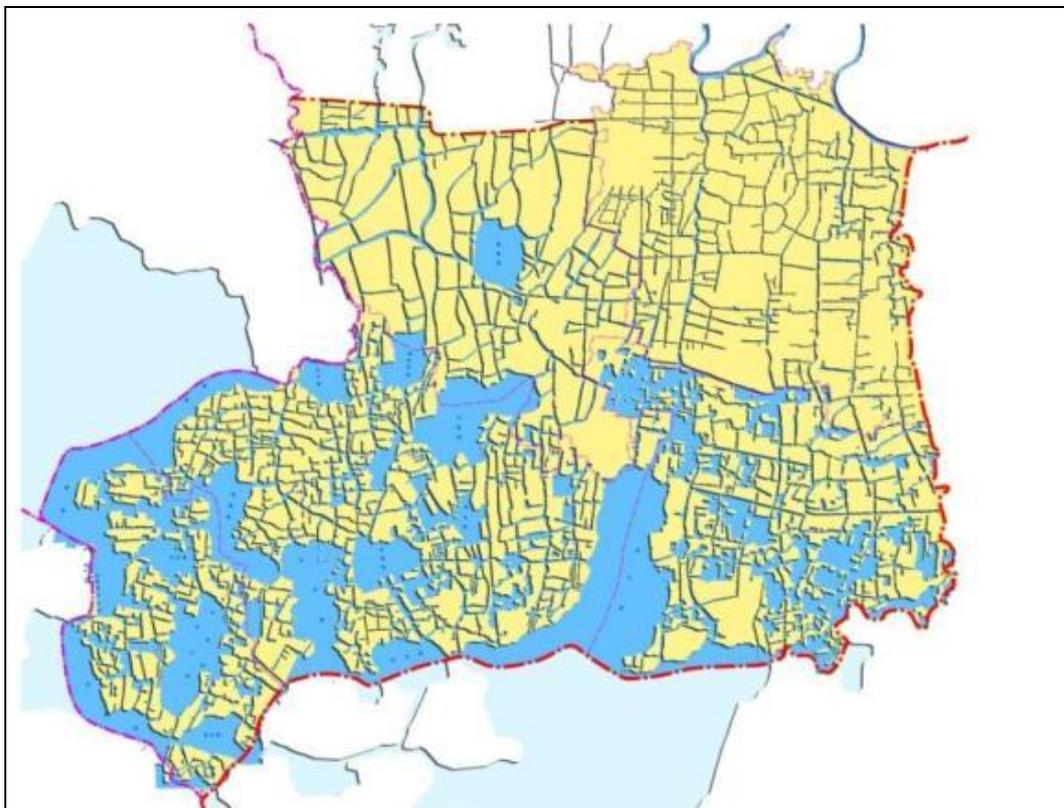
The south area is usually honored by its culture character. The three towns accumulate most of the culture heritage, including 60% of the historical and cultural sites under government protection in Kunshan. In the aspect of nonmaterial I heritage, the three towns occupy 40% of the whole city. Furthermore, Qiandeng is the birthplace of Kunqu opera, which has been listed in the nonmaterial heritage roster by UNESCO. In the aspect of the proportion of culture heritage, three towns account for a large proportion of the whole Kunshan. All in all, the three towns play an important role in the preservation of historic heritage and make a great contribution in the inheriting of culture.

Items		Kunshan	The three towns	Proportion
Historical and cultural sites under government protection	National	1	0	0%
	Provincial	9	7	78%
	Municipal	67	36	54%
Historical buildings		14	9	64%
Cultural relics buried underground region		28	5	18%

*Table1: Three towns' proportion of Kunshan in culture heritage
Source: The author's own study*

2.2 The contribution to ecological townscape environment

The natural landscape resources include many kinds of lakes, rivers and ecological green belt. The three towns belong to the alluvial plain of Taihu lake, where the component of water has accounted to more than 30%. The rivers in this area shape a geographical layout in a crisscross pattern. Along the river layout, the rural land use is arranged. These resources form the townscape feature of “bridge, stream and house”.



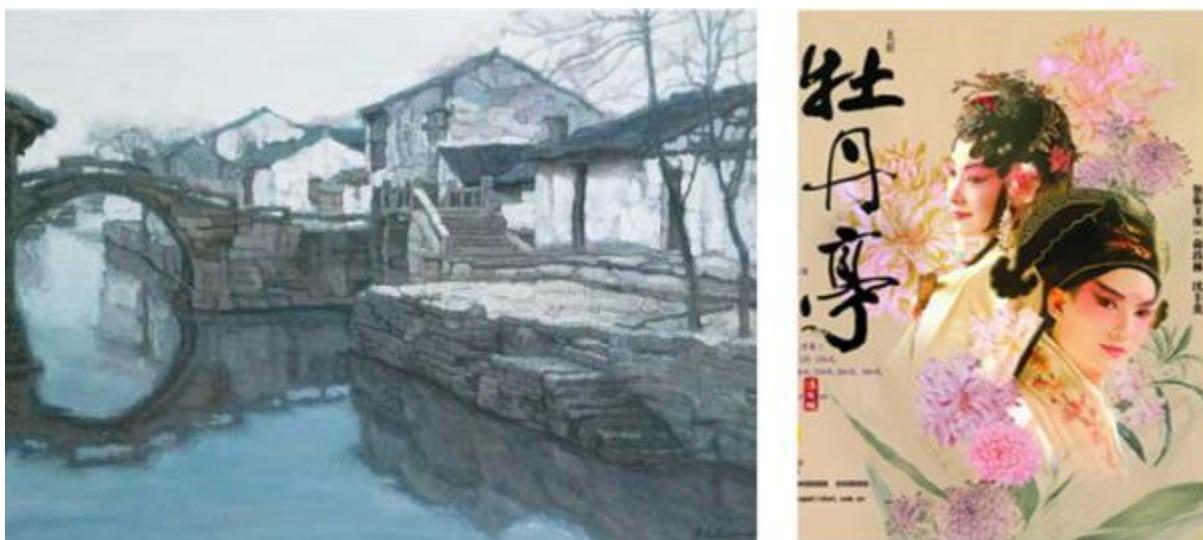
*Figure 2: Watery layout pattern
Source: The author's own study*

2.3 The contribution to reputation and tourism

Because of the cultural fascination of the historic heritage, such as Zhouzhuang and Kunqu opera, the three towns prove to be the worldwide brand of Kunshan. In the recent years, the amount of tourists in three towns has occupied more than 50% of the whole city. As the continual increase of the amount of tourists and the rapid expansion of the influence of tourism brand, the three towns play a significant role in the overall development of the service industries of Kunshan.

	The amount of tourists	Proportion to the whole city
The whole of Kunshan	17,100,000	100%
Zhouzhuang	5,340,000	31.2%
Jinxi	1,730,000	10.1%
Qiandeng	1,520,000	8.9%

*Table2: Three towns' proportion of Kunshan in the amount of tourists, 2011
Source: Kunshan Statistical Yearbook*



*Figure 3: The paint of “Double Bridges in Zhouzhuang” by Yifei Chen (left), Kunqu Opera (right)
Source: The art collection of Kunshan*

2.4 Dilemmas between preservation and development

According to the statistics of 2011, the GDP per person of the three towns covered the range from 8,200 to 15,500 US Dollars. In the aspect of GDP per person, none of the three towns can achieve the average level of Kunshan, let alone the highest level of Kunshan Economic & Technological Development Zone which is mainly responsible for the traditional manufacturing industry.

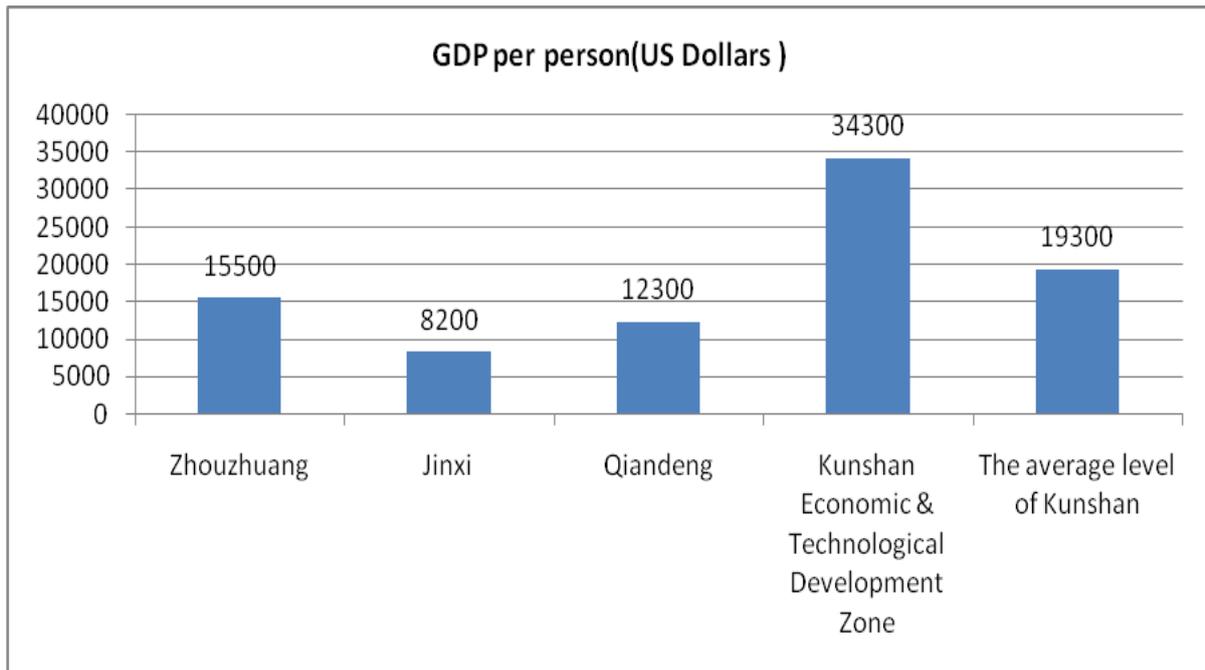


Figure 4: GDP per person of the three towns, 2011
 Source: Kunshan Statistical Yearbook

Although Kunshan is noted for its rapid economic growth, the three towns develop slower than the others because of more strict environmental constraints and historic preservation. The three towns can't follow the development model of Kunshan Economic & Technological Development Zone. The existing development model of the three towns should be restructured. Local identity preservation and economical development should be balanced.

3. Coordinating strategy of preserving the local identity

Despite of the background that many regions have lost the identity during the rapid urbanization in China, the three towns should take the road of characteristic development which depends on the basis of exclusive local culture and ecological resource instead of massive manufacturing industry.

During the current research on the strategy of preserving the local identity, preservation is put more attention than development. Furthermore, local governments' economic and social policies are usually neglected. In response to the problems of local identity preservation during the rapid urbanization, this paper tries to propose coordinating strategy for characteristic areas so as to achieve synchronized planning of development and preservation.

Coordinating strategy is aimed at finding out that how to preserve the local identity as well as achieve the economic development during the rapid urbanization. Moreover, coordinating strategy is involved in the integrated cooperation of different departments instead of disorderly competition. The details are as follows:

3.1 Coordinating strategy in character inheriting

By the method of comparative analysis and evaluation above, what is worthy of preservation has been valued. Culture and watery townscape can be embodied in the local identity of the three towns. The tourism activities should be enriched in order to improve the brand of "watery historic towns". By the integration of resources, the competition and cooperation

among the three towns can be coordinated. The three towns can achieve the developing alliance instead of individual development. Cultural features are protected by the collaboration of three towns. At the same time, every town is encouraged to shape its own identity, not only in the aspect of physical space but also in the aspect of nonmaterial heritage. In the aspect of townscape feature, Zhouzhuang highlights the pattern of “house-street-water-street-house” with significant bridge, Jinxi gives prominence to the model of “house-street-water” with famous porch, Qiandeng emphasizes the texture of “house-water-house-street-house” with the ancient tower.



*Figure 5: Texture and Street pattern of Zhouzhuang (left), Jinxi (middle), Qiandeng (right)
Source: The author's own study*



*Figure 6: The significant bridge of Zhouzhuang, famous porch of Jinxi, ancient tower of Qiandeng
Source: Photo by the author*

In the aspect of nonmaterial heritage, Zhouzhuang highlights the culture of Shen Wansan, a famous merchant in Ming dynasty. Jinxi highlights the culture of Chen Fei, the imperial concubine in Yuan dynasty. Qiandeng highlights the culture of Gu Yanwu, a patriot in Qing dynasty.



Figure 7: The famous merchant (left), the imperial concubine (middle), the patriot (right)
Source: Photo by the author

By the integration of townscape and the cooperation of the three towns, coordinating development of the cultural tourism can be achieved. In addition, by the union with Shanghai and Zhejiang, world-famous agglomeration of historic towns will be gradually cultivated in the future.

3.2 Coordinating strategy in the economical development

On the basis of the local identity, service sector development should be prior to the manufacturing industry and so on. By positive preservation and reasonable use of the resources of historic towns, watery plain and ecological agriculture, the skeleton of service sector development can be constructed. As a catalyst for agriculture and service sector development, tourism also plays an important role in the aspects of culture redevelopment and increasing people's income. By the landscape and activities of agriculture, the relation between the agriculture and tourism can be enhanced. The integration of farmland and tourism route also can advance the added value of agricultural products, as well as improve the income of peasants. The traditional manufacturing industry should be transformed into characteristic and effective development, especially the production of Tourist commodities, art works and cultural handicraft. Synthesizing agriculture, handicraft and tourism, economical development and feature preservation can be coordinated.



Figure 8: Tourism (left), Handicraft (middle), Agriculture (right)
Source: Photo by the author

3.3 Coordinating strategy in the space integration

Coordinating the old towns and new towns on the basis of watery fundament formulates the local morphology in order to balance the ecology, development and society. The new towns have been constructed to satisfy the expansion of urbanization in order to alleviate the pressure of old towns and preserve the texture of historic towns. By reasonable control of the building height and development density, watery townscape can be inherited. In the aspect of

riverside, public character should be a prime concern. The development should give priority to the protection of watery environment.

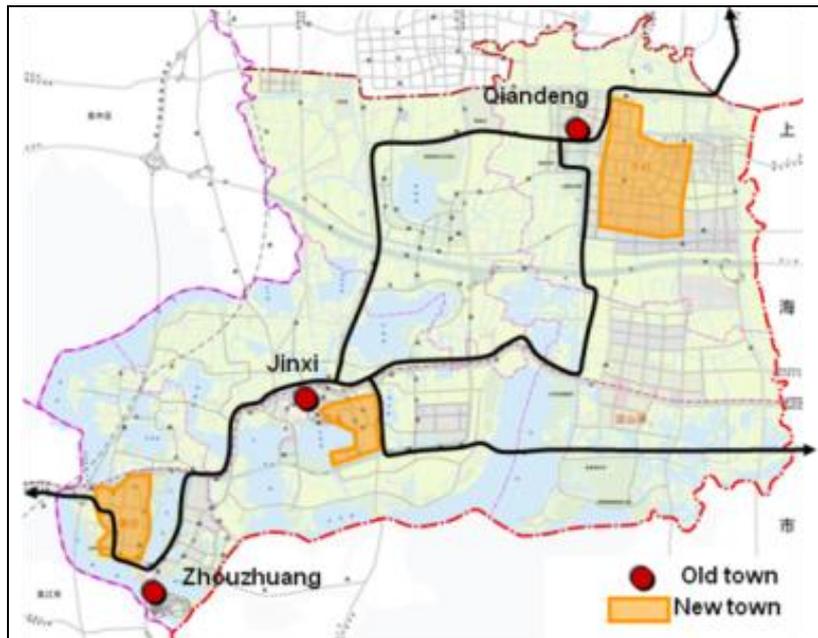


Figure 9: The model of integration with old towns and new towns
Source: The author's own study

There are plenty of characteristic villages around the edge of the three towns. The relation between the residential space and farmland should be balanced in order to help the farming and developing the tourism of villages. Conservation of the integrity of natural landscape inherits the traditional watery layout. According to the advantages of resources, the villages are divided into three groups, cultural, riverside and rustic type. Different types of villages should be adopted different strategy in order to achieve characteristic development.

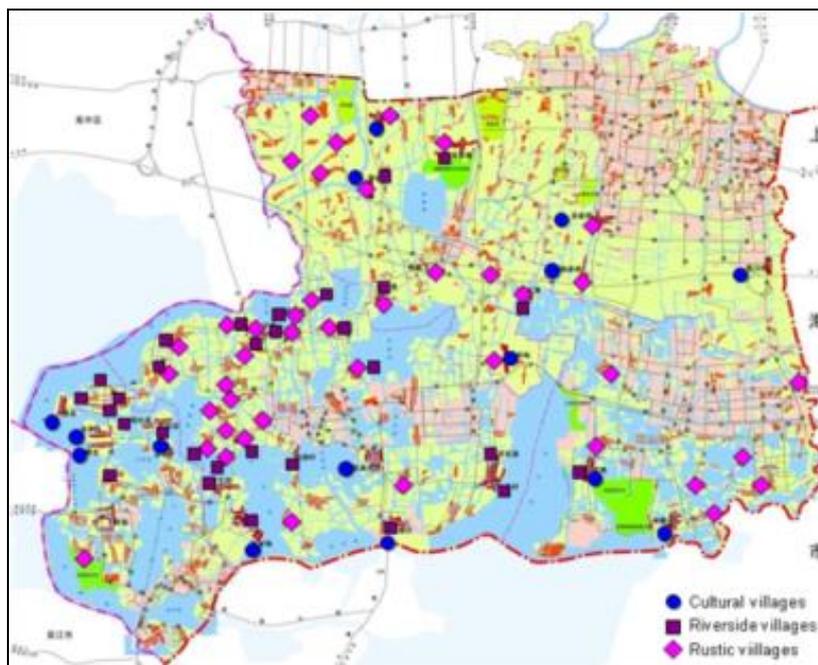


Figure 10: The layout of different types of villages
Source: The author's own study

Tourism system is shaped by the means of integrating many kinds of traditional watery villages with characteristic transport, which not only connect the three towns but also join into the regional tourism routes. Blue corridors along the riverside and green corridors along the road compose the tourism routes. Furthermore, the arrangement of service along the routes is helpful to the development of tourism.

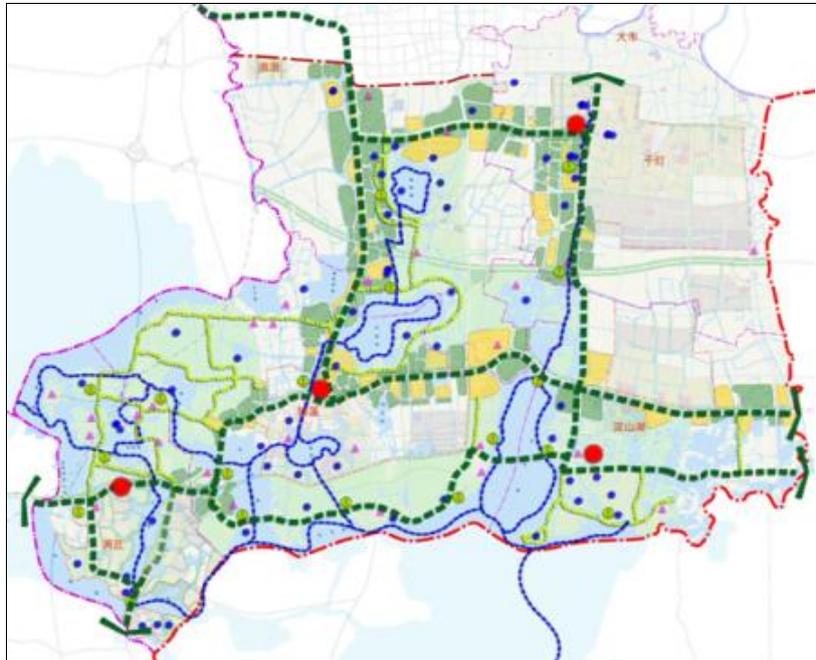


Figure 11: The tourism routes of blue and green corridors
Source: The author's own study

3.4 Coordinating policy

Policymaking in the range of whole city helps to bridge the gap of economic development between the three towns and the others.

Firstly, by increasing transfer payments, the three towns can give priority to the preservation of local identity, both culture and ecology, instead of the manufacturing industry and economical development. Ecological and cultural subsidies help the three towns to preserve the local identity. The improvement of the income helps the peoples' initiative of preserving the culture heritage and ecological environment. Furthermore, the special funds for the three towns have already established to promote the development power.

Secondly, training policy is helpful to the farmers and foreign workers, especially to the development of tourism. For the management leaders, the study of advanced operating model and management should be provided in order to exploit the tourism market. For the service staffs, the knowledge of local culture should be trained in order to spread local culture. In addition, the foreign language training should be provided in order to enhance the ability of tourism service.

Moreover, a coordinating agency is put on the agenda. On the one hand, the agency is responsible for integrating the relationship among the three towns. On the other hand, the agency should cooperate with Shanghai and Zhejiang inter-regionally. By the establishment of regular conferences and communication procedure, the cooperation of local identity preservation and tourism development can be achieved.

4. Conclusion

All in all, the coordinating strategy in the aspects of historical conservation, industrial development, integrating space and policymaking is very useful to the three towns which aim at characteristic development. The coordinating strategy not only helps to preserve the local identity but also achieves the economic development, which can be an excellent balance. Especially, it points out the real possibility that local governments have to implement the coordinating strategy within the current political, economic and social context. Furthermore, the coordinating strategy has a great deal of significance on the future development of the similar regions which are full of cultural and ecological resources in order to preserve the local identity during the rapid urbanization.

References:

- Wang Jinghui (1999) *The theory and planning on the preservation of historic city*, Shanghai: Tongji University Press
- Zhang Hongyan (2010) *City Culture Capital*, Nanjing: Southeast University Press
- Huang Jiaping (2012) "Research on technical route of historical and culture towns and villages conservation planning", *City Planning Review*, Vol.36 No.11
- Li Guangbin (2006) "Urban identity and urban image construction", *City Planning Review*, Vol.30 No.2
- Kunshan Municipal Bureau of Statistics (2012) *Kunshan Statistical Yearbook*, Beijing: China Statistics Press
- Qiu Baoxing (2006) "The Preservation and Protection of Historical and Cultural Cities in the Course of Urbanization", *Modern Urban Research*, No.11
- Wang xi (2000) "Characteristic features of cities and their image forms", *Planners*, Vol.16 No.6
- Zhou Ganzhi (2002) "Urbanization and historic city", *City Planning Review*, Vol.26 No.4
- Zhou, Lan (2006) "Nanjing inner city's conservation and renewal in the course of modernization", *Modern Urban Research*, No.02
- Zhu Guanya (2001) "The exploit of urban character and local culture", *Architecture Journal*, No.11

Problems and Countermeasures of Dujiangyan Agricultural Area Protection during the Rapid Urbanization in Chengdu

Yuan Lin, School of Architecture, Tsinghua University, Beijing, China
Yuan Lin, College of Architecture and Civil Engineering, North China University of Technology, Beijing, China

1. The Devourment of Dujiangyan Essential Agricultural Area during the Rapid Urbanization in Chengdu

Known as the Land of Abundance and one of the basic economic regions of China since Qin Dynasty, Dujiangyan irrigation area of Chengdu Plain, with the developed artificial basin system gestating the city and Lin Pan, is one of the important essential agricultural areas and a typical example of traditional human settlement practice of ecological civilization.

Chengdu Plain is in tempestuous change contemporarily among the rapid urbanization process. The form of traditional ecological culture is seriously separated in the current era. The process of urbanization expanding on the land formed by thousands of years of hard work is full of conflicts, challenges and even unpredictable risks in the future. Over nearly 30 years, Chengdu Plain has gradually formed a city-centered development model, particularly with Chengdu as the center, enabling the existing traditional human habitat pattern to deteriorate in a gradual manner. In this process, the essential farming area has been swallowed by the fast-growing urban construction land, which shows obvious confrontation between urban development and vast natural areas.

Chengdu's urban area covers an area of 483.35 km² as of 2011, but 95 km² 25 years ago (1986), exhibiting an increase of 388.35 km². However, by 2011, the total built-up area of the six cities of Chengdu, Deyang, Mianyang, Meishan, Leshan and Ya'an was 769.3 km², but 147 km² 25 years ago (1986), up by 622.3 km², with the growth of Chengdu accounting for 62.4%. The data indicate the overall rapid urbanization in Chengdu Plain, and also reveals the obvious single-center growth state of Chengdu, central city in Chengdu Plain, in nearly 25 years' urbanization.

By comparing change of cultivated land in 2011 with that in 1991, the overall arable land in Sichuan Province decreases by 6,489 km², and that in Chengdu is down by 1,378 km², accounting for 21.2% of the whole province, while the total arable land of Chengdu, Deyang, Mianyang, Meishan, Leshan and Ya'an has a reduction of 3,603 km², occupying 55.6% of the whole province. From the statistical data changing curve, after implementing strict policy of cultivated land protection in 2004, the number of cultivated land in Sichuan remained unchanged and a slight increase year by year, however, contains the total range of arable land of six cities in Chengdu Plain being still in the trend of obvious declination. From 2004 to 2011, the cultivated land of six cities reduced by 483.3 km², wherein Chengdu decreased by 320.2 km², accounting for 66.3%.¹

The change of Chengdu Plain built-up area and farm land indicates that the current urbanization has tremendous destruction of agricultural land, and this tendency continues. In the next 20 to 30 years, in accordance with the master plan of the existing counties in the Chengdu Plain of construction land use in indicator development, greater pressure will be exerted on the plain agriculture area. As to Tianfu New Area in the south of Chengdu under construction, the land planned for use has more than 1500 km². By 2020, the building land is going to rise by 550 km², and increase to 650 km² by 2030,² linking up with Chengdu into a single stretch with the growth equivalent to an additional city of Chengdu.

For Dujiangyan irrigation area, 17 counties, that is, Guan, Pi, Chongqing, Shuangliu, Chongning, Peng, Xindu, Xinfan, Jintang, Wenjiang, Huayang, Chengdu, Xinjin, Guanghan, Qingshen, Pengshan and Meishan were irrigated before the foundation of the PRC. The

water conservancy management and development of Dujiangyan irrigation area gradually became modernized and specialized after the establishment of the PRC. The irrigation area now continues to expand in hilly countryside. At present, it has an area of 23,200 km², covering the total arable land nearly 17,632,500 km². The beneficial scope includes Chengdu, Deyang, Mianyang, Leshan, Meishan, Suining and Ziyang, totally 7 cities and 37 counties (towns and districts).³ However, the expanded regions are the areas where natural conditions are relatively weak, while the traditional core irrigation area, especially Chengdu, was put into the reality and risk of being swallowed.

The writer combines the present situation of urbanization in the Chengdu Plain with the master plan of each city of the plain in 2020 together. From the view of configuration, Chengdu displays the shape of increased concentric circle and then gradually increased radial pattern, linking up with Pi, Chongzhou and Wenjiang. Tianfu New Area expands southwards, adjacent to part of Xinjin and Meishan. The essential irrigation area of Dujiangyan shows a clear sense of oppression and the tendency of fragmentation.

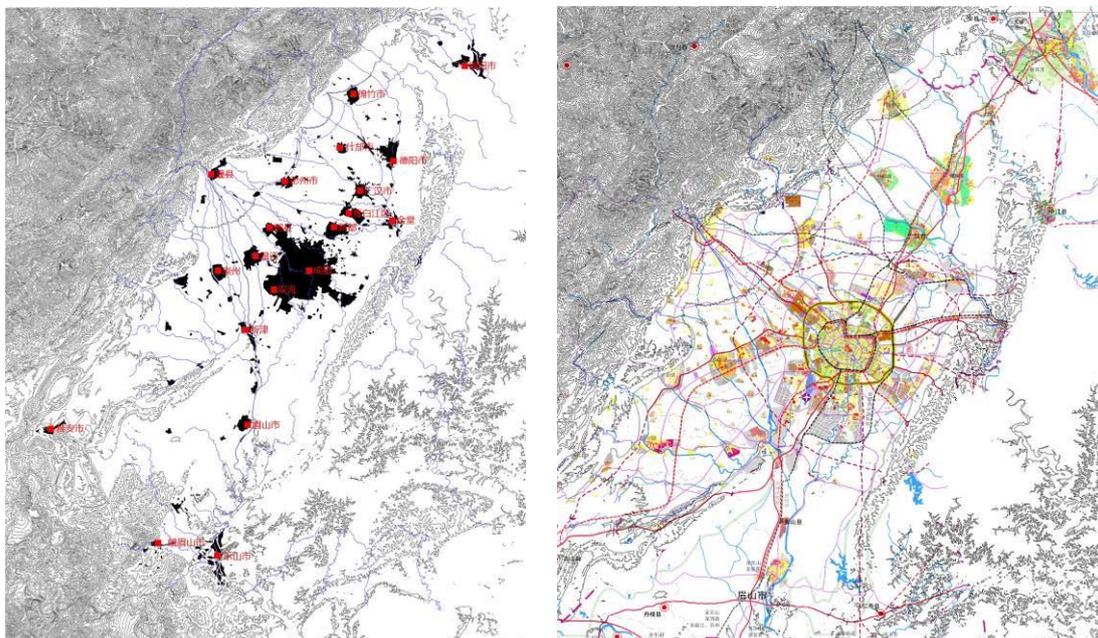


Figure 1: present urbanization pattern (left) and planning in the future (right)

2. Current Agricultural Region Protection Policy and Deep Risks

The open space of the Chengdu Plain has a variety of protection measures during the rapid urbanization in Chengdu. To limit the pernicious urban expansion and promote the protections of agricultural areas, Chengdu has launched and implemented a number of relevant policies, mainly including: (1) answering the call of the country to establish basic farmland protection system; (2) launching creative arable land protection fund in 2008 (has already issued farmland protection fund RMB 1.19 billion to the benefit of 1.14 million households⁴) (3) delineating "198 zones" in the plan, and creating new mode of urban open space in external protection and development; (4) developing *Planning of Lin Pan Protection in Western Sichuan* in the unit of district and county in 2007.

The implementation of the policies has played an active role to protect the open region in the periphery of the city. But we still need a deeper understanding of the hidden deep contradictions and ecological risks behind the implementation of the policies, and judgment on these risks will directly determine the future improvement, promotion of the effective protection of ecological resources. The deep-rooted risks can be seen from several aspects as follows:

2.1 Rural Land Consolidation Based on the Three-Concentration Principle

In recent years, Chengdu has carried out coordination works in urban and rural areas under the guiding idea of “three concentrations”, that is, industry, farmers and land are concentrated in centralized development area, urban area and large-scale operation respectively.⁵ The “Three Concentrations” are the general program of urbanization in Chengdu currently, the fundamental guiding principle in the management of agricultural regions and also the basis of investigation of the utilization of various policies and management nodes. Adhering to the principle of “three concentrations”, Chengdu Government implemented “land consolidation”, “golden land project”, “centralized residence of farmers” and other tentative measures, and vacated much collectively-owned land through demolition, amalgamation, relocation to centralized residence. The land was mostly used for urbanized or industrial development, partly returned for plowland, and partly developed for houses with limited property rights. The land consolidation is bringing about tremendous changes of traditional countryside's Lin Pan pattern, especially large-area Lin Pan destroyed at the boundary of rural and urban areas can be seen everywhere. Moreover, to pursue short-term benefit of agricultural operation, Chengdu also greatly advances large-scale operation of rural land, which is changing the farming mode with household as the unit fundamentally.

Under the “Three Concentrations” principle, the status quo of agricultural land protection system, and implementation and application of farmland protection fund is daunting. The achievement of basic farmland protection target is primarily exhibited by means of village migration and amalgamation, land consolidation, requisition-compensation balance and so on, ostensibly being digital “dynamic balance”, but materially losing the land for thousands of years and increasing new land which is incapable of forming high-efficient agricultural ecologic system in a short period. In addition, the actual effect of farmland protection fund implemented is not obvious⁶, the farmers are not active in farming, and even agricultural land is used for other purposes occasionally, making traditional agricultural system subject to severe test.

2.2 Fragmentation of Lin Pan Protection under Three-Concentration Principle

In 2007, *Planning of Lin Pan Protection in Western Sichuan* was prepared for various districts and counties of Chengdu under the premise of Three-Concentration Principle. The local government took Lin Pan protection planning as the channel of county land consolidation and farmland requisition-compensation balance and adopted separate protection of small residential quarters. For instance, in *Planning of Lin Pan Protection in Pi County* and *Planning of Lin Pan Protection in Wenjiang County*, Lin Pan protection is defined as follows:

“.....The planning of rural residence landscape protective construction in western Sichuan, as the supplement of the “three concentrations” planning, is the house building layout planning in rural areas beyond new rural communities and point layout construction of rural residence yards with preservation value relative to small-scale agglomerated point for scattered settlement, in this way to realize the full coverage of rural areas’ planning.....”⁷

“For the distribution features and value of Lin Pan in Wenjiang District, according to the principle of highly centralized flatland in the new countryside construction and layout planning, Lin Pans with certain scale and high value are protected at certain location.”⁸

It is obvious from the description above that land requisition-compensation balance, land consolidation and new countryside construction are the premise of traditional Lin Pan protection. Under such protection logic, the segments involving Lin Pans of Chengdu shows the tendency of fragmentation, and the understanding of historical heritage and countryside ecological system value is highly insufficient. For example, there are over 8700 Lin Pans in Pi County, while 301 are large-scale ones with more than 10 households living there mostly, accounting for 3.5% (from 1.9% to 17.9% for toher counties) of the total. Such protection is

point-oriented type with water ditches and rivers not included in the system. Furthermore, the protective measures mainly comprise house renovation of single Lin Pan, construction of infrastructure and reconstruction of landscape. According to my visit to various township governments of Pi County in October 2010, the understanding of related departments to Lin Pan protection was diversified, but generally focused on the combination of land consolidation with village migration and amalgamation, protection of large ones, and migration & amalgamation of small ones, or removal of houses with trees remained, or leveling for returning plowland. Few noticed the ecological function of Lin Pans and integrity of traditional intensive cultivation settlement. In the two overall investigation of Lin Pans in Pi County in 2004 and 2006 developed by local government, it was found that the number of Lin Pans in Pi County was rapidly reduced, from over 11,000 in 2004 down to over 8,700 in 2006 in quantity, and 25 Lin Pans/km down to 20 Lin Pans/km viewing from density. As per the tremendous change of the two years, the next round of urbanization shall be carried out according to our current awareness and protection mode. This reduction trend is inevitable and the unique human settlement unit derived from ancient Dujiangyan irrigation area in the Lin Pan of western Sichuan will be under more severe challenges.

2.3 Deep Risks of the Trend of Rural Land Marketization

In the unified design between the city and the countryside, Chengdu's reform also promoted "Rural Marketization"⁹. In 2007 and 2008, Chengdu issued related policies to advance the reform of rural land marketization, drive rural land to become capitalized, promote the reform of rural land and house property right system, boost the flowing of collectively-owned construction land and rural house property rights, stress the launching of rural assets to become capitalized and link the privatization of property right with farmland protection.¹⁰

The current logic of Chengdu to push forward related policies is to reuse the assets through land operation, make them enter the market and produce transactions, which is based on the thought of allowing rural house sites to circulate to create huge wealth. The failure of rural house sites to become wealth is because of the farmers' house sites failing to flow into the market due to the absence of identified property rights.¹¹ The land rights determination developed in the Chengdu Plain currently is the result of further marketization of rural land and the process of land transforming into assets. However, land capitalization and marketization does not mean that high depreciation of ecological value of the land. The trend of marketization is to make the transaction of land and Lin Pans legal and valid, forming capital converting process though the result is hardly to control (commercial, hotels or real estate?).

Land privatization may facilitate out-of-order urbanization of rural areas, bringing deep risks. Vice minister Qiu Baoxing has ever clearly stressed that the protection of public land in China shall not develop in the direction of strengthening private property rights in combination with urbanization development:

"(Currently) the reform targets at land property right's privatization or clarity to avoid the tragedy of public land, allowing thousands of farmers to protect the farmland as their own living house so as to reach the national land saving objective. However, this idea seemingly conforming to logic sense has long been broken up by the practice of western developed countries and developing countries and regions in Africa and South America relentlessly. The rapid urbanization of American land privatization system resulted in farm managers selling their land to the developers with one another, facilitating the spreading of low-density suburbanization. The land privatization in Africa and South America also led to the land owners to sell their land once for all, which caused most farmers without land to flock into big cities to form slums and poor agricultural yield."¹²



Figure 2: real estate development of Lin Pan in the Pi County

3. Advice on the Construction of the Protection Measures of Agricultural Improvement Area of Essential Farming Heritage Area

The development mode of the contemporary regional pattern of Chengdu Plain can be observed with the concept of dual subject of nature and artificiality (“intersubjectivity”) advocated by ecological philosophy. During the urbanization for nearly 30 years, the formation of regional pattern has been led mainly by the system of cities and towns. Under this kind of thinking, the urban construction land has been the main part while nature just the background usually overlooked, and the incessant enlargement of the urban city-built area without scientific guidance has caused the unbalanced development of agricultural and natural land and urban construction land pattern. To change the phenomenon, however, apart from insisting on the consistent concept of big city-growth limitation and coordinated layout of cities and towns, a dependable protection system in plain area needs to be constructed through a series of measures so as to reinforce the subjectivity of nature (including agricultural areas) and expedite the balanced development of the region.

The base of the unfolding of contemporary urbanization of Chengdu Plain is the essential agricultural area in Dujiangyan created by hard-working laboring people during thousands of years. The conflict of land with high quality and urban construction can be observed obviously in Chengdu Plain. As early as 1991, someone mentioned, “Just like the construction of natural reserve and the protection of rare animals and plants, the construction of cultivated land reserve is needed.”¹³ However, in recent years, though basic protection system for farmland has been constructed, the cultivated land protection has been basically unfolded in the logic of requisition-and-compensation balance, which thought highly of the quantity of farmland but attached little importance to the quality.

From the perspective of history, the traditional essential agricultural areas in Dujiangyan refers not only to the farmland with high quality, but also a living system entirely applying to the traditional artificial river basin in Dujiangyan, including basic elements such as artificial water network and woodlands, also places carrying traditional cultural life like counties and towns, and ancestral temples, and so on. From Song Dynasty, Dujiangyan mentioned by ancient people has not been just a headwork project, but has been referred to as the entire artificial basin system in the plain. Historian Tan Jihe thought, “As a world cultural heritage, Dujiangyan should be a complete concept, so the headwork area of Dujiangyan as the world cultural heritage at present can be expanded to the whole irrigated district and can then apply for world cultural heritage entirely as an extension project.”¹⁴ Current situation of the cultural heritage in Dujiangyan mainly refers to the headwork water engineering and is not expanded to the waterway of the plain and the living environment. Tan’s opinion attached importance to the heritage value of the whole irrigated district, combining the development of essential plain areas with the whole heritage protection.

During the urbanization of traditional European agricultural countries, agricultural area protection had been recognized as a key task and had also been tentatively explored by means of the technology method of “national parks”. Take Britain as an example. The formation of humanization of the earth caused by long-hour human activities makes it impossible for Britain to construct wilderness protection-leading systems of national parks in accordance with American modes. In England and Wales, the purpose of national parks construction is to on the whole provide modes for sustainable country management. “Landscape” (including the combination of nature and humanities) is identified as an important object of protection of national parks and protection measures of the highest level are formulated.¹⁵ In order to resist the “threat” to countries of urbanization, in 1926, England specially established Country Protection Society of England. Associated with other societies, CPRE positively asked for the construction of national parks in agricultural areas. Their romantic interpretation of cultural landscape was declared in National Parks Commission (1949), which was responsible for investigating and supervising country development and precluding the infringement of mining, agriculture, tourism and other commercial interest group, for the purpose of maintaining “traditional” agricultural lifestyles through prevention and protection. Later, in 1958, the national commission for country protection turned to be the rural commission.¹⁶

In recent years, Richard T.T. Forman, an ecologist, also put forward his conception of concentrated agriculture protection in the long-term ecological planning for Barcelona. He systematically studied the relationship between regional people and nature, formed the “agricultural parks” conception in the planning of “regional food system” and thought that concentrated protection of agriculture with large areas could not only reduce costs and enhance quality, but also save the value of landscape and ecology.¹⁷ Similar practice had been unfolded in areas with long agricultural history such as Belgium and Germany. This countries delimited “high-value agricultural areas”¹⁸ and its protection scope had exceeded the “open space”, developing in the direction of cultural landscape - focusing on various function value of traditional landscape, giving consideration to many aspects such as production, disaster prevention, aesthetics, recreation, education, and human habitat, including key elements like vegetation, waterway, and villages, in order to protect the sustainable development of traditional countries.

The urbanization of Randstad in Holland embodies another type of development way of agricultural area protection in city region. Before the massive urbanization, for the purpose of protecting traditional country areas, Randstad in Holland delimited the “green heart”, which mainly consisted of lowland agricultural areas formed by reclamation for hundreds of years. At the end of the 20th century and the beginning of the 21st century, the “green heart” had gradually become the “national landscape”, starting to be in combination with the protection action of the United Nations world cultural landscape, and became an independent administration area.

The construction of contemporary system for protection zone in China explores less of the protection in traditional agricultural areas, while Yunnan Hani terraced fields, the world cultural heritage, is an attempt of force and the heritage protection form of exploring the integration of traditional agriculture, landscape, and living environment.

No matter “heritage zone” or “national parks”, they both emphasize the entire protection of traditional large agricultural areas. The contemporary essential agricultural areas in Dujiangyan should use for reference the protection experience described above, expanding the heritage protection of Dujiangyan headwork to that of intensively cultivated agricultural areas in the plain, and agricultural protection areas with large scopes need to be delimited to change the development trend of current fragmentation to private property right. This protection form, on the one hand, has unity of plain irrigation area in aspects such as ecology and culture, and on the other hand, is another way of preventing agricultural areas from infringement during rapid urbanization. Agricultural areas need to be developed, but more

attention should be paid to the heritage and the entire ecological value. The contemporary essential agricultural areas in Dujiangyan have been seriously deteriorated, but quantities of ancient riverway and a number woodlands settlements are still conserved in counties like Wenjiang, Pixian, and Dujangyan. We can plan the counties as a whole, breakthrough the current protection situation of woodlands settlements of each county being protected one by one and the requisition-and-compensation balance of agricultural land, and in combination with the involved scope of traditional irrigation area of 17 counties in Dujiangyan, commonly map out the agricultural areas with higher historic heritage value and better ecological environment, delimit “essential agricultural heritage zone in Dujiangyan” by means of heritage protection theory, recognize as a whole cities and towns, woodlands, ancient riverway, essential farmland, ancestral temples, water culture, and so on, promote the dominant position of agricultural areas in the protection form of “essential agricultural heritage zone in Dujiangyan”, cooperated with urbanization, to expedite the construction of new patterns in the plain areas of Chengdu.

References:

- 1 Data source: Statistical Bureau of Sichuan Province. Sichuan Statistical Yearbook. China Statistical Publishing House. 2006-2012;
- 2 Overall Planning of Tianfu New District in Chengdu, Sichuan Province (2010-2030)
- 3 Li Yi. “Good Governance” Management Mode and Its Practicable Research. Beijing: Water Conservancy and Hydropower, 2009.10: 4
- 4 Yin Hongwei. Plan Cities and Countries as a Whole is an Efficient Way of Changing Dual Structure —— Exclusive Interview with Sun Ping, the Municipal Committee and Deputy Mayor in Chengdu. Southern Window. 2010.3.10-3.23 the 6th Issue
- 5 Chengdu Planning and Administration Bureau. Summary of Experience in Planning Urban and Rural Planning as a Whole in Chengdu. 2011
- 6 He Xiaofei, Dong Jingsong. Traditional Economic Efficiency of Agriculture not high, Chengdu Pilot Arable Land Protection Fund Facing Challenges, China Business Herald, 2010.7.13 the 006 Section
- 7 Chengdu Town Planning Design and Research Institute. Planning Instruction of Protective Construction of Pi County Rural Landscape. 2007
- 8 Chengdu Town Planning Design and Research Institute. Planning Instruction of Protective Construction of Wenjiang County Rural Landscape. 2007
- 9 He Xuefeng. The Logic of Land Right —— Where to Go for Rural Land System of China. Beijing: China University of Political Science and Law Press, 2010: 265
- 10 Chengdu Municipal Community of Sichuan Province of the Communist Party of China People’s Government of Chengdu Advice on Strengthening Farmland Protection and Further Reform and Improve the Property Right System of Rural Land and Housing (on a Trial Basis) 01.2008
- 11 He Xuefeng. The Logic of Land Right —— Where to Go for Rural Land System of China. Beijing: China University of Political Science and Law Press, 2010: 265
- 12 Qiu Baoxing. The Paradox of Cultivated Land Protection Policy and the Countermeasures. City Planning, 2006.8:11
- 13 Liu Yu. An Early Research on the Construction of Arable Land Protection Zone in Chengdu Plain. Geographics and Territorial Research, 1991.5:32
- 14 Sichuan News Net-Chengdu Daily (Chengdu). 02-04-2010
- 15 [En]Ian.D.Wright, translated by Wang Sisi . Landscape and History since the 16th Century. Beijing: China Construction and Industry Press, 2011:208-209
- 16 [En]David· Pepper, translated by Song Yubo and Zhu Danqiong. An Introduction to Modern Environmentalism. Shanghai: Due Press and Shanghai People’s Publishing House, 2011.4:267-268

17 Richard T.T. Forman. Urban Regions: Ecology and Planning Beyond the City. Cambridge University Press

18 B. Pedroli, A. von Doom, G. de Blust, et al.(eds.), Europe's Living Landscapes: Essays Exploring Our Identity in the Countryside. Wageningen, the Netherlands: KNNV Pulishing.

Eco-city Planning: Pure Hype or Achievable Concept

Belinda YUEN
Singapore University of Design and Technology
Singapore

Synopsis - This paper seeks to investigate the case city of Singapore. In particular, it examines the planning and development of the Punggol eco-town through documentary research and onsite observation. The paper will interrogate the key strategies, results, lessons learned and replicability of Singapore's eco-city planning. The analytical lens is on illuminating the strengths and weaknesses of eco-city planning.

1. Introduction

Against the speed of urban expansion and the global push for sustainability, making existing cities and new urban development more ecologically based and livable has become a priority in an expanding number of countries around the world (Joss, 2012; UN-HABITAT, 2009). A similar growth trajectory is emerging across Asia, from China to India, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore and Vietnam even though the challenge is to mainstream sustainability in development plans and policies. Among Asian countries, Singapore seems to have assiduously promoted ecological modernization, which seeks to promote economic growth with environmental improvement.

As encapsulated in a series of government documents (especially after Singapore has committed itself to becoming a party to the Kyoto Protocol in late 2006), for example, in the 2009 Inter-ministerial Sustainable Singapore Blueprint and 2011 long-term Concept Plan, the aim is to plan for a sustainable Singapore. This will be effected through an environmentally responsible and sustainable approach to development where future development balances economic growth with environmental stewardship and social harmony. Sustainable development is not an after-thought in Singapore. It is an integral aspect of the urban planning process where the inherent circularity of the physical processes of resources, activities and residuals must be managed effectively while providing wellbeing and quality living. Towards this end, Singapore is developing the Punggol eco-town (2011) as a prototype for its future public housing development.

Even though the notion of eco-city planning is not new in international urban planning literature, it is being applied to the whole of government and all the actors of Singapore's community including households and businesses. Sustainable development is promoted as a way to grow Singapore more efficiently (to develop with less resources and waste), cleanly (to develop without polluting the environment), and green (to develop while preserving greenery, waterways and natural heritage). The approach is to introduce effective *planning and design* concepts to make it conducive for residents to adopt eco-lifestyles, exploit *urban solutions* to achieve stretched environmental targets, and engage, educate and enable *people* to be an integral part of the 'go green' efforts.

This urban planning paradigm shift can have far reaching effect at several levels. At the local level, public housing, at least in the Singapore context, is where the majority (over 80%) of

Singaporeans live. At the regional and international levels, Singapore's urban planning and development has been increasingly regarded as an inspiring model for many developing countries (Yeung, 1987; Yuen, 2011). In recent decades, Singapore has been exporting this urban knowledge. It is building eco-cities in the region in collaboration with local partners (e.g. Tianjin eco-city in China) while emphasizing that Singapore acts as a 'living laboratory' aimed at incubating and displaying new 'smart' environmental technologies and sustainable development urban solutions. Using the case study of Punggol eco-town, this paper will interrogate the key strategies, results, lessons learned and replicability of Singapore's eco-city planning. The analytical lens is on illuminating the strengths and weaknesses of eco-city planning.

2. The Basic Ideas of an Eco-city

An eco-city is developed as an aid to mainstreaming sustainability in urban development at the neighbourhood level (Kulshrestha, 2007). Its goals are to maximise (e.g. respect for nature) or minimise an attribute of urban planning (e.g. demand for land, transport or energy consumption). Its roots can be traced to the early work of the 19th and 20th century planning pioneers such as Lewis Mumford, Frederick Law Olmsted, Patrick Geddes and Ebenezer Howard who have variously argued for planning and building cities more sustainably while preserving nature and ecological surroundings (Mumford, 2004; Hall 1996).

As early as 1898, Ebenezer Howard has promoted the concept of developing 'garden cities' with carefully balanced areas of agriculture, industry and residences, surrounded by greenbelts. Patrick Geddes and Lewis Mumford, for example, have advocated the idea of an organic city where cities as living organisms evolve as they adapt to a changing environment while Ian McHarg developed the concept of ecological planning and a multi-layered approach on the regional scale with an ecological orientation to explicitly connect ecology theory to planning and design practice, thus laying yet another integration of human and natural environments in urban development, especially in Europe.

In the USA, since the mid-1970s post-oil crisis, the importance of compact urban structure, building with nature and other city planning approaches in saving energy and resources has been emphasized by Urban Ecology, a Berkeley-based non-profit organization, which later went on to coin the term 'eco-city' to address the sustainability of city development (Register, 2002). The advocacy is to 'rebuild cities in balance with nature'. In recent years, as urbanization deepens and greening urban growth becomes ever more urgent, there is renewed attention on the eco-city concept and practices (Susuki et al, 2010). The vision of eco-city is no longer a city architect's imagination but increasingly grounded in research and science of sustainability (Wong and Yuen, 2011).

Eco-cities are being built in different parts of the world, from North America and Europe to the Middle East and Asia. In the United Kingdom, the proposal is to build 10 new eco-towns by 2020 (Morris, 2011). The intention is to offer an opportunity to promote sustainable living and zero-carbon development while also maximising the provision of green space and potential for affordable housing. In the Middle East, Abu Dhabi is developing the world's first carbon neutral city, Masdar (US\$22 billion project). Masdar (6 sq km) is planned for a population of 45,000 to 50,000 with standards in green living that include clean power, desalination plant run on solar power, magnetic trains for transportation (cars are not welcome) and 100% waste recycling.

In Asia, China is embarking on a programme of building eco-communities. Eco-city building is proposed for not just the big cities like Beijing, Shanghai and Tianjin but also the small- and

medium-sized cities of Yuxi, Weihai, Rizhao and Changshu, among others. Many countries have offered to help China develop eco-cities. The most advanced of these developments is the 30 sq km eco-city at Tianjin for 350,000 residents, which started in 2007 as a joint collaboration between the governments of China and Singapore. The aim is to achieve harmonious living with man, economy and environment and on a wider scale, for the Tianjin eco-city to become a development model for other Chinese cities.

Eco-cities would characteristically comprise compact, pedestrian-oriented, mixed-use neighbourhoods that give priority to public transport and re-use of land (Roseland, 1997; Engwicht, 1992). They are designed with the consideration of socio-economic and ecological requirements dedicated to minimizing the inputs of energy, water and food, and waste output of heat, air pollution, etc so as to create an attractive place to live and work. It is not uncommon for eco-cities to have goals such as to minimize demand for land, particularly for greenfield sites, to minimize primary material and energy consumption, to optimize interaction with municipal and regional material flows, to minimize impairment of the natural environment, to maximize respect for natural context and to minimize transport demand, among others.

But, building eco-city also implies building a culture for change that is based on ethical behavior, social responsibility and clean capital so as to maintain a harmonious and non-exploitative relationship with the biosphere. The UK Sustainable Development Commission (2011), for example, has reported that the concept of sustainable lives is as yet not well understood among UK government officials and experts interviewed. The lack of definition, direction and vision for sustainable lives is a major challenge, especially when coupled with an overwhelming predominance of consumerism within present society and the mixed messages from inconsistent or contradictory policy decisions that create confusion and worse, undermine existing buy-in towards more sustainable behaviours.

3. Punggol Eco-town

Singapore, located 1° north of the equator in Southeast Asia, is an island-state with a land area of 714 km and a population of 5.3 million. Since 1960, its resident population has been progressively resettled from the once pervasive slums and squatter settlements to live in high-rise, high-density self-contained public housing new towns. By the 1990s, the city is almost slum-free. Still, as with many other fast growing coastal cities, Singapore faces several potential vulnerabilities including coastal land loss, increased flooding, water resource scarcity, increased energy demand, urban heat stress and public health threats (e.g. dengue, haze). Many parts of Singapore are less than 15m above sea level.

Recognizing that the environment is critical to economic growth and long-term development, Singapore has adopted an action-oriented approach to sustainable development with emphasis on long-term vision, integrated urban planning, sound environmental policies and high regulatory standards. For instance, in the transport sector, private vehicle ownership and usage are controlled to reduce energy consumption and traffic congestion. The Inter-Ministerial Committee for Sustainable Development (2009) formulated a blueprint with extensive public inputs, setting targets in several priority areas:

- Improving resource efficiency (e.g. to achieve a 35% improvement in energy efficiency from 2005 levels by 2030, attain a recycling rate of 70% by 2030, reduce domestic water consumption to 140L per person per day by 2030);

- Improving quality of the urban environment (e.g. to reduce level of fine particles in the air to 12 $\mu\text{g}/\text{m}^3$ and cap SO₂ levels at 15 $\mu\text{g}/\text{m}^3$ by 2020 and maintain same levels up to 2030, have 0.8 ha of green space for every 1000 persons and increase greenery in high-rise buildings to 50ha by 2030, improve accessibility for pedestrians and cyclists and have 70 per cent of all journeys made by public transport);
- Developing knowledge (to build key capabilities and technologies, especially in resource efficiency and urban planning and design and to develop Singapore as a knowledge hub and provider of services relating to environmentally sustainable urban development); and
- Encouraging community ownership and participation (to make environmental responsibility a part of Singapore's people and business culture, e.g. schools to step up their efforts in promoting environmental education, public sector to adopt more environmental sustainability practices).

The government has committed to invest S\$1 billion over five years to support these efforts including helping businesses reduce the upfront costs of investing in resource efficient buildings, systems and processes. Buildings will be made more energy efficient. Developers are encouraged to build green buildings and since 2005, their efforts are recognized through the Green Mark Scheme. The goal is to have 80% of buildings certified with Green Mark by 2030. For existing buildings, an S\$100 million Green Mark Incentive Scheme has been introduced to help owners undertake energy efficiency retrofitting. The government will take the lead by developing eco-friendly public housing. Solar technology will be piloted at 30 public housing precincts across the country. The Housing and Development Board (HDB) as Singapore's public housing authority and largest residential developer will reduce energy use of common areas in public housing buildings by 20-30% and build more eco-friendly public housing starting with development along Punggol Waterway in Punggol New Town.

Since its establishment in 1960, the HDB has constructed 23 new towns and more than 1 million residential units and a substantial volume of related commercial, industrial and institutional facilities. As early as 2004, the HDB has established a Committee on Environmental Sustainability, comprising representatives from public and private sectors, to formulate a long-term strategic direction and forward planning for the development of environmentally sustainable public housing towns. It has committed to having all its new projects Green Mark certified since 2007. A review of the HDB Green Housing Book (2007) revealed a combination of passive and active approaches towards creating a sustainable environment including:

- Creating a better environmental quality through design in retrospect to the site (taking account of the locality, existing topography and accessibility), design for comfort living (through passive design and facilities provision, e.g. greenery, pneumatic refuse collection system, low volatile organic compound paints to achieve acceptable air and noise quality) and earth control measures at development sites (through erosion control and sediment control);
- Achieving energy efficiency largely through the use of zero-energy and low-energy systems in every possible areas, e.g. designing in relation to nature, greenery provision (e.g. vertical greening), building elements such as building form and orientation with the windows facing North-South and gable ends facing the East-West direction, façade articulation, wall design (e.g. cool wall) and effective exterior envelopes, maximization of natural lighting and ventilation, monitoring of energy usage, low energy consumption systems and alternative energy;
- Promoting water conservation and reuse in view of Singapore's water resource shortage, starting from the design of water distribution system to the water fittings installed and more recently, the introduction of water sensitive urban design;

- Improving resource materials in the construction of buildings through design consideration (e.g. standardization of doors and windows), alternative construction, alternative materials, recycled materials and construction modularization by testing green technologies and innovations in its building developments.

On 28 March 2007, it started building an eco-precinct - Treelodge@Punggol (completed on 19 December 2010) as a pilot project to demonstrate that innovation and sustainable development can be both practical and cost-effective. The precinct comprises 7 16-storey apartment blocks with 712 units of 3- (98), 4-(600) and 5-room (14) flats. As with earlier developments, the basic unit of planning is the neighbourhood where the daily needs of life are accessible within 5 minutes' walk but with a strong urban design focus on public spaces, making the neighbourhood not only walkable and liveable but also improving human scale and the sense of place.

3.1 Starting with Eco-precinct

Treelodge@Punggol, a build-to-order public housing scheme, is designed with triple aims - to lower maintenance cost, to meet environmental targets in energy, water, etc and to enable the community to experience eco-lifestyle. The precinct is designed to harness the elements of nature (e.g. daylight, rainfall and wind) and technologies to promote sustainable green living. It incorporates passive design as well as a range of green technologies and innovations for effective energy, water and waste management. The 7 residential blocks are designed with a podium car park across their 1st storey where the roof of the car park is landscaped into an eco-deck, transforming it into an activity centre, a connector with a green spine connecting all precinct amenities and to public transport nodes and a large green footprint. The latter has enabled maximization of greenery in the eco-precinct, achieving a greenery provision of more than 4.0. The introduction of the podium car park-eco-deck has actualized several benefits:

- Allowing residential blocks to be spaced further apart, thereby providing larger inter-block spacing;
- Facilitating the introduction of a vehicle-free eco-deck on the roof of the podium car park, thereby allowing more greenery (a hybrid green roof system, vertical greening and large trees are grown at the car park level through air wells) to be introduced and creating a landscaped environment for residents to rest, relax and socialize while helping to absorb environmental noise;
- Providing direct car parking facilities at the immediate ground level of the blocks for residents, thereby increasing convenience to residents.

As part of the green living, the precinct is, however, designed with a reduced number of car parking spaces and co-location of land uses and facilities to reduce travel demand. The eco-precinct is located in proximity to the existing Punggol mass rapid transit station and Damai light rail station. Aside from public transport, residents are encouraged to car share; a car-sharing scheme is planned including hybrid cars. Other design strategies to improve residential environmental quality, energy, water and resource efficiency include:

- Strategic positioning of all residential blocks with facade windows to face the prevailing north-eastern winds and maximize natural lighting and ventilation;
- Use of cool building walls with enhanced thermal insulation to mitigate heat and radiation from the tropical sun;
- Solar panels on rooftop to power lighting of common areas;
- Energy saving light fittings in common corridors and car park deck, energy-saving machine roomless lifts that use 10% less energy than conventional lifts;

- Dedicated recycling refuse chutes within the flats;
- Rainwater harvesting system to support use of rainwater for washing common corridors and landscape irrigation;
- Integrated wash basin-toilet pedestal system to allow water used for hand washing to be redirected and recycled to the pedestal cistern for the next flush.

Another prime feature is the intensified greenery, which is expected to lower the surrounding temperature by as much as 4° Celsius while beautifying the precinct environment. Greenery takes several forms - the eco-deck above the car park, skyrise greening on building roofs, facade greenery and community gardens. To enhance site ecology and the green experience, lift lobbies at the car park level are also designed as landscaped courtyards while a green spine (with a tree-lined 650m jogging path, exercise stations, community pavilions, children's playground made from recycled materials) provides additional recreation spaces for all ages and connectivity within the precinct.

According to the HDB, the eco-features have increased overall construction costs by about 5-8% but the total estimated energy savings is about 2 gigawatt hours that could power some 400 four-room households for 1 year. Treelodge@Punggol has since received several sustainable development awards. It is Singapore's first BCA Green Mark Platinum Award public housing project, the highest rating given to promote energy savings, water savings, healthier indoor environments and adoption of more extensive greenery in the design and construction of green, sustainable buildings. In 2010, Treelodge@Punggol has also received the Chicago Athenaeum's Green GOOD Design Award, recognizing the importance of sustainable design. Initial reaction from the potential residents has been positive, with many looking forward to 'moving in to our own place and we are very pleased with the specially designed ecofriendly features here at Treelodge' (HDB Corporate Newsletter Jan/Feb 2011: Breaking Ground).

Following the Green Mark award of Treelodge@Punggol, in 2010, the HDB has announced plans to further promote the notion of sustainable township development, extending the notion of the eco-precinct to the entire new town, designating Punggol as Singapore's first model eco-town. Punggol, to be developed in two phases (phase 1: 2011-2015, phase 2: beyond 2015), will be designed to promote sustainable living based on three key principles - to introduce effective planning and design concepts to make it conducive for residents to adopt eco-lifestyles, to exploit urban solutions to achieve stretched environmental targets and to engage, educate and enable people to go green. It has recently launched an e-book to help residents learn more about the green features found in Treelodge@Punggol and a series of e-games to help residents keep the environment clean and green and make recycling their way of life.

A crucial aspect of the Punggol eco-town project is that it will serve as a 'living laboratory' to identify and test cost-effective new ideas and technologies in sustainable development, integrating urban solutions to create a green living environment and build local capacity to replicate these solutions in other HDB new towns (Table 1). A two-tiered test-bedding strategy is adopted - emerging technologies are test-bedded at one or two precincts within the Punggol eco-town, e.g. Treelodge@Punggol to prove their feasibility before they are implemented on a larger extent across the town. A multi-agency collaboration led by the HDB has been established to spearhead the development. The intent is to provide all participating partners with the planning insights and experience to replicate successful sustainable features of Punggol eco-town in other public housing towns and ultimately, the entire Singapore.

Table 1: Eco-urban Solutions in Punggol New Town

Area	Eco-urban solutions	Target over next 5 years
Energy	Solar photovoltaic system	To reduce energy consumption for the common areas by 20%.
	Elevator energy regeneration system	
	Energy efficient lighting in common areas	
	Smart grid/meters	
Urban mobility	Use of electric vehicles through the car-sharing scheme. Charging points for the electric vehicles to be located at strategic points to enhance the convenience to residents of using an electric vehicle.	
	E-bicycles to provide an environment-friendly alternative for residents to commute within the eco-town or simply just for leisure.	
Water	Water efficient fittings	To bring about a net water reduction of about 10%.
	Rainwater harvesting	
	Smart water meters	
	Water quality monitoring	
Resources and waste	Recycling points at every level in the residential blocks by building a second centralized refuse chute dedicated for recyclables to enhance convenience for residents to dispose their recyclable waste but also raise collection efficiency for waste collectors.	Three times increase in recyclables.
Maintenance	Fuel cell emergency power supply	To reduce maintenance costs.
	Self-cleansing paint	

Source: HDB website.

When examined against climate change actions, the various eco-features of the Treelodge@Punggol eco-precinct appear relevant to addressing climate change (Table 2). Some of them are mitigation measures and others are adaptation to climate change.

Table 2: Assessing Treelodge@Punggol Eco-precinct

Urban function	Eco-urban features	Relevance to climate change
Land	High-rise city living - a room with a view (compact city): 7 16-storey apartment blocks with 712 units of 3, 4 and 5-room flats. There are 98 units of 3-room flats, 600 units of 4-room flats and 14 units of 5-room loft units.	Increase green coverage and hence lower ambient temperature and reduce energy used for air-conditioning.
	Podium car park.	
	Accessibility to amenities and public transport: Located in Punggol New Town, at the junction of Punggol Road, Punggol Drive and Punggol Place, Treelodge@Punggol is just a few minutes' walk from the future Town Centre, Punggol MRT/LRT Station and the Punggol Bus Interchange.	Reduce need for travel and hence energy used for transport.
Water	Green Mark Platinum Award for water efficient buildings.	Reduce fresh water usage.
	Rainwater collection system: the building roof has 400 sq m of space to collect rainwater. Rain falling on the roof is first drained into a tank situated on the 16th storey of the block, and then treated using a chemical free system before stored in a tank for common area (common corridors) washing and irrigation. The water tank can store up to 7,000 litres of water, which is sufficient for a month's washing.	
	An integrated washbasin and toilet pedestal system in the flats for water used to wash hands to be recycled for the next flush.	
Energy	Green Mark Platinum Award for energy efficient buildings	Reduce energy usage and hence less greenhouse gas emission.
	Solar panels on the rooftop to tap on clean energy to power the lighting for the common areas, e.g. common corridors of the estates as well as the eco-deck. This will save 80 percent of energy used.	
	Units are designed with larger windows to allow more natural light.	
	Motion sensors for multi-storey and podium car parks to provide on-demand lighting.	
	LED Lighting.	
	A 'Car Sharing Scheme' will be introduced to provide residents with access to a fleet of cars, which also include hybrid cars.	
Environment	Unique to this eco-precinct is the 5-room loft unit that features a double-volume living room and an open terrace that can be converted into a sky garden.	Increase green coverage and hence lower ambient temperature and reduce energy used for air-conditioning. These features are expected to lower the surrounding
	Intensified greenery with an eco-deck above the car park, skyrise greening on roof decks and a community garden. Vertical greening along the columns	

Urban function	Eco-urban features	Relevance to climate change
	<p>of the residential blocks.</p> <p>Enhanced landscaping to intensify greenery.</p> <p>North-south orientation of the buildings.</p> <p>The buildings are designed to face the prevailing wind direction for cross ventilation.</p> <p>Designed to reduce noise transmission between rooms, the flats will be fitted with the patented FerroLite partition wall system. The wall is essentially non-load bearing and made of ferrocement. As compared to other cement-based partition walls, the hollow core of the FerroLite wall reduces the need for raw materials like cement (by 30%) and sand (by 20%), yielding overall savings of up to S\$1.5m per year. In addition, services can be installed and concealed within the wall with minimal wet works and without the need for hacking.</p>	<p>temperature by as much as 4° Celsius.</p> <p>Cool down the ambient temperature in the flats and hence reduces the need for air-conditioning.</p> <p>Reduced use of cement helps to reduce greenhouse gas emission in cement production. Hollow walls also help to insulate tropical heat.</p>
Health	<p>A 650m long tree-lined pathway that circles the eco-precinct to cater residents for jogging or taking leisurely walks in a lush environment.</p> <p>Exercise stations for the elderly.</p> <p>A children’s playground made from recycled materials.</p>	Encourage healthy lifestyle to improve resilience to climate change.
Waste	A dedicated recyclable refuse chute at each block to encourage recycling.	Reduce inclination of recyclable waste and hence reduce GHG emission.

Source: HDB website.

4. Conclusion

In contrast to many other Asian countries, Singapore has realized and fully accepted that unsustainable development will undermine long-term economic wellbeing. That is, economic growth and sustainability need not be mutually exclusive. A proactive approach is adopted to address sustainable development comprehensively and to mainstream sustainable development in its urban plans. Singapore has started to develop an eco-precinct and scaling up to an entire eco-town. Even though the eco-town is very much work in progress and also not the only smart growth solution, the development experience demonstrates how new neighbourhoods can be designed to be more sustainable. Urban planning strategies can play a critical role in improving environmental quality and addressing climate change by providing such housing and public infrastructure that minimizes transport and energy demands, maximizes respect for nature while satisfying basic needs. It can be a game changer. An integrated planning approach not only coordinates the spatial development of quality core living and working sectors with transport development but also unlocks sustainable living opportunities.

Though early days yet, through its eco-precinct and eco-town planning, Singapore is seeking to transform its current highly energy-intensive urban economic system into much less energy intensive and much less carbon intensive processes. Critical to the transition to lower carbon development is vision, supportive institutional framework and understanding of cross-sectoral issues as well as participation of the population whose lifestyle will eventually determine the extent of sustainable development achievement. In other words, while government commitment is crucial, sustainable development is not the lone action of government. So, it is imperative that every opportunity is made to engage the people, from policymaking (e.g. in the inter-ministerial sustainable development blueprint making) to planning and design of the eco-town and community education to raise awareness and promote a more sustainable way of living as the everyday 'default' way of life.

A key lesson for other fast growing Asian cities is that cities must and can be planned to develop more sustainably. Admittedly, this is not an easy task. As illustrated by the Singapore eco-town development, it will take time and costs. Even as we acknowledge that green development may be more costly than conventional development, its benefits in terms of longer-term energy and resource savings could align and better support the delivery of more productive and resilient built environment. Given the long gestation, the development is perhaps best approached in an incremental way, building up local knowledge and capability as well as the confidence in finding urban solutions that are suited to local conditions. But, crucially, underpinning the incrementalism would be the necessary requisite to look at the urban area as a whole to grasp the full meaning of sustainable urban development, having appropriate scale (start with a smaller area and test-bedding before scaling up), connectedness (to the community and cross-sectoral interests) and the fundamental principle of thinking and acting sustainably now, rather than later. Eco-city planning is a learning process. It should, therefore, also be monitored and reported upon to better understand how the settlement is functioning and where changes might be needed.

References

Engwicht, D. (1992) *Towards an Eco-city: Calming the Traffic*, Sydney: Envirobook.

Hall, P. (1996) *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, Oxford: Blackwell.

Housing and Development Board (2007) *The Green Housing Book*, Singapore: Housing and Development Board.

Inter-ministerial Committee on Sustainable Development (2009) *A Lively and Liveable Singapore: Strategies for Sustainable Growth*, Singapore: Ministry of the Environment and Water Resources and Ministry of National Development.

Joss, S. (2012) *Tomorrow's City Today: Eco-city Indicators, Standards and Frameworks*, Bellagio Conference Report, London: University of Westminster.

Kulshrestha, S. K. (2007) *Vrindavan eco-city in making: Working together for sustainable development*, 43rd ISOCARP Congress.

Morris, E. S. (2011) *Down with ECO-towns! Up with ECO-communities. Or is there a need for model eco-towns? A review of the 2009-2010 eco-town proposals in Britain*. In T. C. Wong and B. Yuen (ed) *Eco-city Planning: Policies, Practice and Design*, Springer.

Mumford, L. (2004) *Cities and the crisis of civilization*. In S. M. Wheeler and T. Beatley (ed) *The Sustainable Urban Development Reader*, New York: Routledge.

Register, R. (2002) *Ecocities: Building Cities in Balance with Nature*, Berkeley: Berkeley Hills Books.

Roseland, M. (1997) *Dimensions of the ecocity*, *Cities*, 14(4):197-202.

Suzuki, H., Dastur, A., Moffatt, S., Yabuki, N. and Maruyama, H. (2010) *Eco2Cities: Ecological Cities as Economic Cities*, Washington DC: The World Bank.

UK Sustainable Development Commission (2011) *Making Sustainable Lives Easier*, London: Sustainable Development Commission.

UN-HABITAT (2009) *Planning Sustainable Cities: Global Report on Human Settlements*, London: Earthscan.

Wong, T. C. and Yuen, B. (2011) (ed) *Eco-city Planning: Policies, Practice and Design*, Springer.

Yeung, Y. M. (1987) *Cities that work: Hong Kong and Singapore*. In R. J. Fuchs, G. W. Jones and E. M. Pernia (ed) *Urbanization and Urban Policies in Pacific Asia*, London: Westview Press.

Yuen, B. (2011) *Urban planning in South-east Asia: Perspective from Singapore*, *Town Planning Review* 82(2): 145-167.

The Evaluation and Improvement Method of Waterfront Urban Landscape: the Case of Urban Landscape Planning for West Lake in Hangzhou, China

Ye ZHAO, School of Architecture and Planning, Southeast University, China

Jianguo WANG, School of Architecture and Planning, Southeast University, China

Abstract

Urban landscape usually contains two layers of meaning: landscape and viewing, especially in waterfront zone. Traditional design focuses on landscape design which purely improve the quality of objects in static, passive way much more than noticing the initiative viewer as subject. Actually, landscape and viewing are dialectic. Interactive design using reasonable visual evaluation methods, integrated with “positive” human activity optimization as well as “passive” landscape improvement, can be helpful to enhance the quality and controllability.

West Lake in Hangzhou is the famous cultural heritage in China with humanities and nature fitting each other perfectly, which also represents the model of blending natural scenery and modern city. However, it faces some urgent problems in modern urban development, the relationship between West Lake and the city has become extremely uncoordinated, as it suffered very serious “pressure” from the city.

This paper takes West Lake as example, basing on lots of survey, analyzes the visual effect from every grid viewpoint on the lake (using GPS to locate), and tries to find out the both way of adjustment from the respects of viewer and landscape, and finally proposes some thinking of the design method.

Being water-adjacent is one of the critical principles for ancient cities. In contemporary city, although the functional factor has gradually declined, the landscape meaning is getting greater. People are enabled to comprehend a city in a panoramic way at an open waterfront zone, which can improve the quality of the city. As so, the relationship between the urban and the water landscape is a fundamental issue for the urban construction.

When considering urban and landscape, people usually treat them as two separate objects simply collaged. Researchers seldom focus on the interaction of the two parts as well as the value based on this, and the following strategy is hence ignored. This paper takes West Lake in Hangzhou as example, tries to find reasonable, simple, universal methods to solve the “landscape oriented” urban design issues.

1. Background

1.1 Urban Waterfront Landscape

Urban waterfront can be divided into two types: one is inside the urban area as a planar

element, like West Lake in Hangzhou, Xuanwu Lake in Nanjing, while the other goes through the urban as a linear element, like Qinhuai River in Nanjing, Grand Canal through many cities. The former one can form a panoramic view of the city; the latter one is more tend to be landscape belt. In comparison, the open water body is more valuable for urban landscape.

Though there are mature principles for the waterfront space design, like building setback distance, height and massing control of the buildings near the shore, have guaranteed the basic quality of the environment, the shape and scale of the water vary as well as the relationship between city and water, that can deeply influence the viewer. If open waterfront zone boasts multiple public sight-seeing points, people can read the city's skyline from different places, at different angles, it would be easy to establish the impression of the whole city.

Due to the integration of the architecture and landscape discipline, architects began to draw the overall thinking into detailed architecture design: the impact of new construction in the built environment, the way of coexisting, the design strategy in visually sensitive zones, the use of computer technologies to simulate the building volume, the visual sequences and landscape effect at key viewpoints. A series of analysis on the massing, height, façade, top and the whole outfit have accelerate the rational of the design.

Overall thinking is good for architecture design in some levels, but not enough for the large scale of the city, especially at panoramic waterfront zone, which might emerge the problem of "entirely mess, partially ordered". So, besides discussing possibilities of the design, the evaluation should get rid of architect's personal preference, judge objectively through scientific method and public participation, and finally achieve the adjustment and control.

1.2 Evaluation Methods

Hangzhou is outstanding among cities boast large-scaled waterfront in China, and so is West Lake in Hangzhou. It has experienced both natural and man-made evolution through thousands of years, with great crystallization of mild temperament and cultural allusions, which is the best representation of Hangzhou. But, this characteristic has faced some challenges in modern development. The lake opens up to the city so straightforwardly that increasing high-rise buildings and rising height expose directly without any cover. The well-proportioned skyline has turned into a stiff wall rapidly, and has replaced the lakeside kind of feeling. West Lake has suffered the pressure coming from the city, very seriously.

The landscape planning contains two processes: evaluation as approach and control as result. Both of them will divide the landscape into initiative viewing and passive objects. Initiative viewing focuses on the variety and sensibility, while passive objects emphasize on reality. According to the difference of the evaluation and control, evaluation mainly discusses people's initial feeling as visual subject, while control prefers improving the quality of the landscape based on the conclusion from people.

2. Evaluation methods

According to general rules of landscape viewing behavior, the viewer and landscape are two basic elements. The viewer stresses the viewpoints, route and the psychological feeling, the landscape stresses the value and significance of every constitute unit of the landscape.

2.1 Evaluation of the Viewer

Chinese researchers have proposed many analysis modes: aesthetic mode, ecological mode and so on. So far, researches are normally qualitative description, lack detailed method for some special condition.

1. Categories of viewpoints

West Lake is famous of “being surrounded by hill at three sides and city at one side”. It’s 3200 meters from south to north and 2700 meters from east to west, with 5.6 square kilometers of water area, surrounded by hill at south, west, north direction, and city at east. The Baoshi Hill (BaoChu Pagoda) and Wu Hill (ChengHuang temple) are the borders of the “stage”, the distance between them are the visible urban landscape. The Su Causeway, the Bai Causeway, Gu Hill, Isle Mid-lake Pavilion, Ruan-gong Isle are the most important public space and viewpoints. (Figure 1)



Figure 1: Visible Area from West Lake

We classified the viewpoints into three types according to the sightseeing activity: spots, linear and planar. Spots are usually at dominant height or can get special experience, there are two spots in West Lake: BaoChu Pagoda and ChengHuang Temple. Linear points are a series of points along people’s route, which can provide continuous visual experience and change with people’s movement. Su Causeway and Bai Causeway are typical linear points. Planar points are multiple ones in a larger area yet have little difference. Since the lake locates on one side to the city, people’s activity on the lake can be divided into several large areas.

On the other hand, people’s activity has two types of static and mobile. When people stand still at some relatively stable point, the feeling is independent and unique. Good static viewpoint is favorable for landmark buildings. Mobile viewing means people formed the perception during the moving, overlaid multiple urban landscape façades and finally got the whole impression. It is always related to the linear and planar points, continuous movement and visual overlying is the basic feature. During the route, special spot in mobile process equals static spot.

2. Evaluation methods

We took many ways to collect the performance of urban landscape as follows:

1) Questionnaire. We collected opinions of different groups (ages, nationalities, education levels) by questionnaires and interviews randomly along the Su Causeway, at “Ten Scenes”

and boat docks. The questions involve selection of viewpoints and route, landscape nature and feelings, architectural features and details, the overall impression and evaluations. All withdraw 100 valid questionnaires, of which 80 were Chinese, and 20 were English copies.

2) Viewpoint marking. During the continuous scene, mark out the best, the worst, sudden change spots with explanation and illustrations. We chose the Su Causeway and the Bai Causeway as the route, started from the south of the Su Causeway, walked forward north, bypassed Gu Hill, until the east end of the Bai Causeway, marked out 22 spots with photos and writing.

3) Pictures and records. This is the most direct way to record the real situation of the landscape at every special spot. The broad lake is a typical planar spots assembled, on which paddleboats can cruise randomly. We put a grid on the lake, which is 250 by 250 meters in north-south direction, numbered every intersection point, then used the GPS to locate, took multi shots at every point that can merge into a panoramic view of the city from this angle. We got 130 valid photos, 120 of which were used. (Figure 2) Through the methods above, most of the viewpoints have been covered, around and in the lake.



Figure 2: Photos from Three Viewpoints

2.2 Evaluation of Landscape

The evaluate object is the elements that form the urban landscape, such as buildings, trees and so on. Although visual effect is a subjective concept, there are some general aesthetic standards and common sense that can be quantified.

1. Single element

Urban landscape is formed by many elements, which contain manmade elements like architectures, sculptures, bridges, and natural elements like mountain, water and trees. For West Lake, manmade elements are dominant and important for the visual effect, especially when the buildings are continuous background. Since high-rise buildings determine the quality of the skyline, we defined the visible area in depth of 9 km, evaluate every high-rise building in this area from the aspects of height, scale, façade, top feature, material and distance from lake shore. According to the principle of coordination with the surrounding, we picked the best 5 buildings from the total 70 ones: West Lake culture center, Xinqiao Hotel, China Bank, Hangzhou Friendship Hotel and ZJCOF (Zhejiang Cereals, Oils & Foodstuffs Import & Export Co., Ltd).

2. Group elements

The skyline and layers mainly show the group performance. Since the center of the city keeps changing, land developing intensity increasing rapidly, the quantity and height of the buildings

being break, the overlap situation has been serious in recent years, the vacant has been gradually filled into a “wall”.

The rigid surface and the same height result in the monotonous façade, and the variety and value have been weakened. So, in order to get good visual effect, the skyline and subjective experience are the key points.

The skyline is one kind of special impression of the whole city, formed by the high-rise buildings. A good skyline needs appropriate fluctuation, landmarks at exact position, and natural link between city and nature. We graded from the unit density, unit area range and unit First height Difference. The higher density is, the less obvious rhythm; the greater area range is, the better identifiable is; the higher difference is, the more obvious fluctuation is.

The subjective experience judgment is from the buildings’ layers, color and visual patch, in detail, the substantial degree of layers, area proportion of manmade and nature, and color coordination. The variety and color coordination are correlative to the quality, the higher the better, while the area proportion of manmade and nature is inverse correlative, the less the better. (Figure 3)

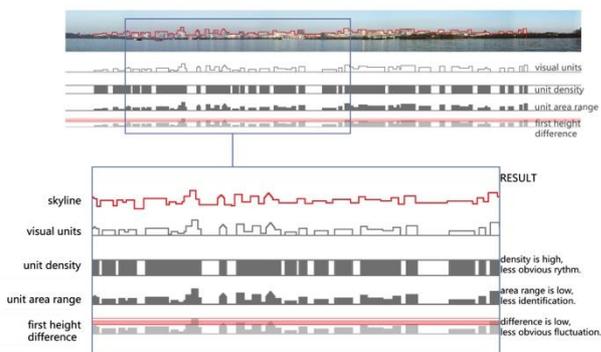


Figure 3: Skyline Analysis

2.3 Relationship between viewer and landscape

In the actual process, the evaluations of the two parts happen simultaneously. People are subject; landscape is object, by the medium of viewer. A complete process can be described like: people stand at some point (or along some route), use the methods of viewing judgment, make evaluations of the landscape. So, they are not isolated but relying on each other. If analyses “point” without “landscape”, it’s prone to over-emphasize the subjective choice, if judge the “landscape” without “point”, it will be unpractical in built environment.

The comprehensive evaluation is based on the data synthesis and screening, the evaluation of the landscape is quantities, hence treated as the basic conclusion, while the evaluation of viewer is qualitative, and treated as the adjustment suggestion.

But the conclusion is not a precise score, especially when the viewpoint’s choice is quite subjective, so we add the questionnaire some descriptive expression, such as “ the visual quality at the YaDi Bridge is pretty good, 85 score”, “ when I row a paddleboat moving from north to south, the whole landscape is getting better”, “I think the landscape west to the ‘Three Pools Mirroring the Moon’ is much better than the east part”.

3. Methods of control

3.1 Improvement of viewpoints

During the process, we graded 102 photos and classified them into 4 levels: the first class is the best 23 viewpoints, scored 80-90, the second level is 13 points which are 60-79, third is common points, 48 ones, which are 30-60, the fourth is the worst 18 ones scored 10-30. All these points are scattered in three types (spot, linear, planar). Among “Ten Scenes”, “Spring Dawn at Su Causeway”, “Orioles Singing in the Willows” and “Leifeng Pagoda in Evening Glow” are better than “Autumn Moon Over Calm Lake” and “Lingering Snow on the Broken Bridge” that are closer to the urban façade. Respectively, Su Causeway is far from the façade, with “Isle Mid-lake Pavilion” in between adding the layers of the landscape, is much better than the Bai Causeway. On the lake plan, the area east to the Isle Mid-lake Pavilion is the worst at all, for there is no any block or landmark. (Figure 4)

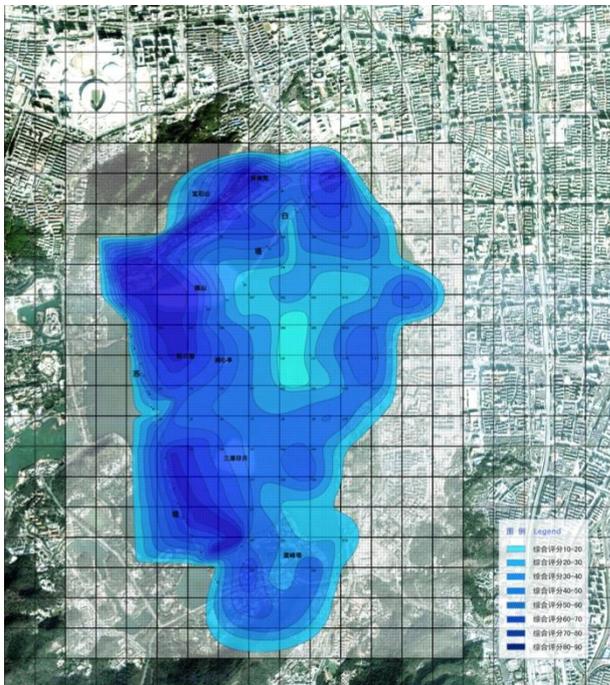


Figure 4: Scores of all Viewpoints on the Lake

Through the analysis, we proposed the improvement strategies:

1. Avoid negative viewpoints (spot aspect). Viewpoint is unit of the system, numerous points form routes. The quality of the points decides the whole effect. In fact, most of the “Ten Scenes” face the urban façade directly, so when the façade is not good enough at some spot, the spot should be avoided. For example, “Lingering Snow on the Broken Bridge” should increase the probability of XiLi Lake on the other side of the bridge. “Leifeng Pagoda in Evening Glow” should guide people to overlook the Su Causeway. “Orioles Singing in the Willows” could shift the focus to the “inland” activities like jogging. “Breeze-ruffled Lotus at Quyuan Garden”, “Three Pools Mirroring the Moon” and “Viewing Fish at Flower Pond” should improve the tour line and environment inside the scenic area rather than outside.

The viewpoints along the shore need different approaches to optimize: poor ones could take advantage of adjacent landscape to attract and transfer people’s interest, such as willow

shadow effect can block the lake and city landscape but emphasize the depth of the shoreline, while excellent viewpoints should increase opportunities and space for tourists to stay.

2. Update cruises on the lake (linear aspect). There are 4 terminal docks located at the south and north end, and 1 transfer dock at the “Three Pools Mirroring the Moon”. The exist cruise are 5 lines: “Three Pools Mirroring the Moon” – Su Causeway, “Three Pools Mirroring the Moon” – Lake Shore park, Lake Center Islands – Gu Hill, “Three Pools Mirroring the Moon” – YongJin Dock, HuaGang Dock – “Three Pools Mirroring the Moon”. This means 60% of the cruises go across the worst area. So, under the premise of not changing docks and sight attractions, we change the shape of the cruise line to avoid the worst area: in regard to the cruises via central islands, move the stops from the east side to the west, in regard to the cruises toward the eastern shore, move the stops towards natural section of the bank, where trees can cover the high-rise building far away. (Figure 5)

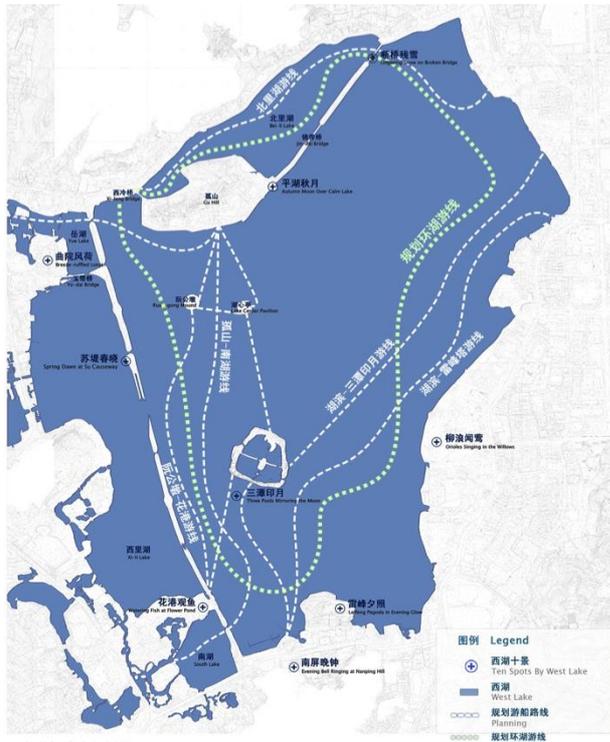


Figure 5: Adjustment of Cruises on the Lake

3. Choose good view surface (planar aspect). On the lake, the area east to the Isle Mid-lake Pavilion is the worst, followed by northern part, and the southern is the best. The visual quality is related to the shape of lake itself and relative position with the urban façade. Medium and close landscape are very effective in improving the panoramic scene, so, marking out the best surface is also a positive countermeasure. According to the questionnaire and photo scoring, the Su Causeway and “Orioles Singing in the Willows” section are the best surface for panorama.

3.2 Improvement of the urban landscape

Since the urban landscape is the appearance of the buildings' organization, improvement should pay attention to the spatial structure and form.

1. Urban center system adjustment and overall layout planning

This strategy is based on the overall planning of the urban structure. High-rise buildings are mainly distributed in Wulin Square, Qinchun Road, Station District, Qianjiang New District, Binjiang New District. In the next 20 years, Qianjiang New District is the direction of the development, which means more high-rise buildings will appear in the façade. According to the data calculation, Hangzhou's urban center system would become a continuous one connecting five sub-systems into one. But this doesn't allow the random grow. High-rise buildings should be well placed, not only in plan, but also in elevation, not only in new district, but also in old area. From the perspective of "viewing city from lake", if the buildings perpendicular to the façade can "form skyline fluctuate in rhythm and combine landmarks at multipoint, the façade would be worth viewing. So, we prefer the "two cores and four sub-cores" spatial system: Wulin Square as traditional commercial core and Qianjiang New District, each represents the north and south develop center of the city, four sub-cores locate around and between. When people see the urban façade at any point from the lake, the skyline will appear multi combinations. (Figure 6)

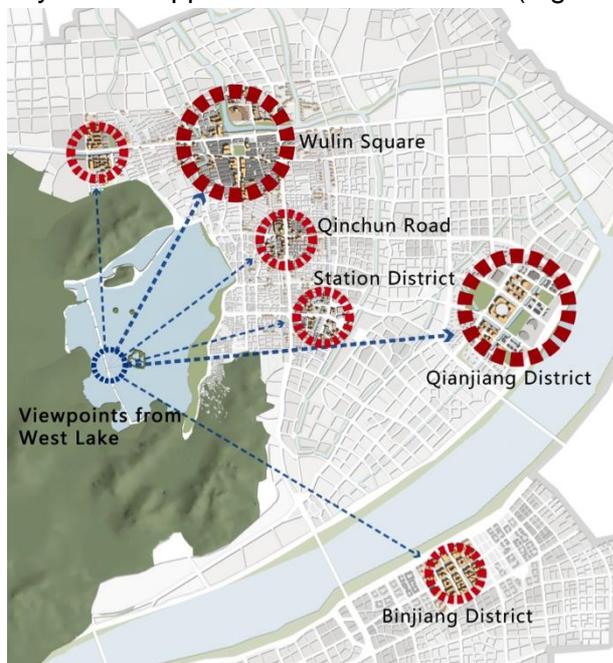


Figure 6: Urban Center System Structure

Besides the adjustment of the layout, the height control is another critical method. We numbered every block in the visible area, picked out the buildings higher than 8 floors and 32 meters, established corresponding data files (property, location, floors, color, material, top, photo), overlaid the atmospheric visibility that reduce along the distance, finally got the lake-centered visible cambered area data base. The concentric spheres are circled with the Su Causeway, radius as 2 km, 3.5 km, 6 km, 9 km separately, corresponding to lakeside house, Qinchun Road, Station District, Qianjiang New District. Ideal skyline shape helps us decide the height upper limit for each stage: 32 m, 100 m, 150 m, 200 m. 70% buildings must be within the height, between 50%-70% of the figure, in order to attain the safe pattern of the spatial structure and landscape (basic requirement), afterwards, the buildings in "two cores and four sub-cores" need some adjustments according to the whole three dimension effect. The entire east coast city is divided into 18 control zones by this mode, with the urban plots

fully covered. Buildings' height limitation within different plots provides the basic framework and platform for the future management and control, and connects with the next level of urban design work well. (Figure 7, Figure 8)



Figure 7: Safe Pattern of the Urban Spatial Structure

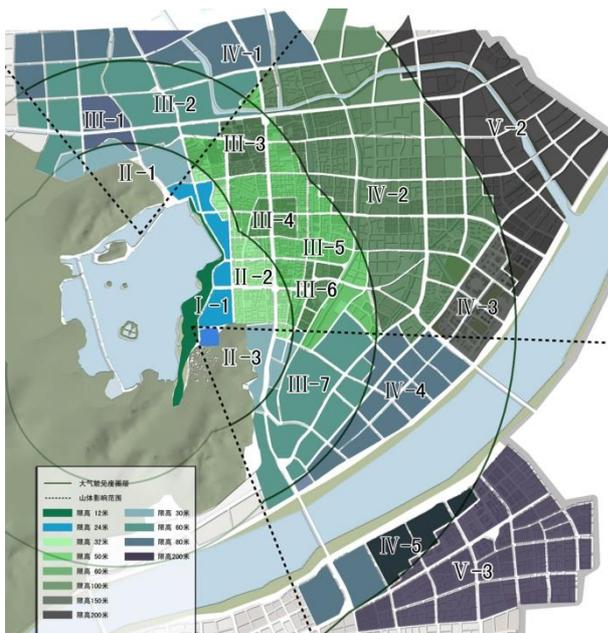


Figure 8: Height Control of 18 Plots of the Visible Area

2. Improvement of single buildings

Improvement of buildings is mainly on the exterior. We chose the feasible aspects of top improvement, façade improvement and greening: rectification of the "temporary shape" and advertising boards at the high-rise buildings' top, reduction of conflict with the built environment by choosing materials and colors according to the building's status in the whole façade, greening on the annex platform for increasing the variety of the base level. Then, we picked 25 single buildings to carry out the plan.

3. landscape supplement in lakeside

Lakeside space has special value for it can provide a relative separate surface for landscape viewing yet blends the lake and shore into one, the design of the space can not be neglected. Among the photos, we found that all the points where photos contain Isle Mid-lake Pavilion, Gu-Hill or tortuous shorelines, the point must be above second level. Because of these natural elements attract people's interests, the urban landscape easily get blurred and out of focus. For its property as the boundaries of urban landscape and as the edge of the lake landscape, we proposed two ways of supplement: urban interface fix and lakeside landscape construction.

As the start of the landscape, lakeside should link with the urban in a natural way, from the height, massing, shape, style. Buildings should lower than 12 meters, in simple style and small scale, just for adorning the shore.

In tourists' opinion, the lake is broad lacking of focus, but the shore is rich of all kinds of plants and furniture, so they prefer the pavilions and trees to the lake. In so, the arrangement of the plant should correspond to the landscape, tall trees at surface needs shelter, low shrubs at surface needs opened up.

4. Conclusion

1. Characteristics of the city need to be shown by representative of culture or landscape, commonly referred to as "special culture" or "characteristic landscape". In the context of urban landscape increasingly following the same pattern, protection and inheritance of landscape, publicity and highlighting of cultural characteristics, is an important measure in enhancing the quality and content of the city. But more important is to find a balance between conservation and construction, to seek reasonable remodeling methods, to create a dynamic, competitive environment full of human temperament.

2. "Landscape + View" two-way adjustment for urban landscape visual evaluation has multiple effects. Conduct reasonable route guidance and viewpoint choice from the "View" perspective is what urban design has done: closely integrated design with people's feelings. While actively respond to the plight of urban construction, and reflect on foresight idea, which is helpful to establish scientific platform enables the control and management of urban landscape operate more rationally.

3. Visual evaluation remains some deficiencies. First, landscape planning based on visual assessment can not independently solve all problems, let alone replace the overall urban planning, but needs support from other assessment methods and planning results. Secondly, "visual evaluation" as the name suggests, is landscape environment evaluation in accordance with personal visual aesthetic standards. We followed the planimetry perspective rule, but when groups of people work together, because of the difference of standard and personal preferences, may cause bias in terms of accuracy and scientific aspects, to be further improved. Thirdly, the interviews have a strong "personal touch", the number and the level of participants directly influent the accuracy and objectivity of the "conclusion", therefore, the set of the interview questions, organization of programs are particularly important.

(Project Cooperation: Wang Jianguo, Yang Junyan, Chen Yu, Xu Ning, Liu Di, Zhao Ye, Kong Xiangheng, Yang Yang.)

References

Yimin Sun, Minzhi Li, Chunyang Zhang. (2006) Urban design method based on the vision of landscape: the case of urban design of central University Region in Guangzhou [J]. *City Planning*, (11), pp. 93-96.

Lintai He. (2006) Urban design study concerned natural surroundings: based on MianYang city situation. (paper)

Qin Sun. (2008) Study on the space landscape for Xuanwu Lake in Nanjing. (paper)

Appendix

Ten Scenes of West Lake:

1. Spring Dawn at Su Causeway
2. Autumn Moon over the Calm Lake
3. Viewing Fish at Flower Pond
4. Orioles Singing in the Willows
5. Three Pools Mirroring the Moon
6. Twin Peaks Piercing in Cloud
7. Evening Bell Ringing at Nanping Hill
8. Leifeng Pagoda in Evening Glow
9. Breeze-ruffled Lotus at Quyuan Garden
10. Lingering Snow on the Broken Bridge

Track 3: Community and Stakeholder Engagement

49th ISOCARP Congress Proceedings

Planning for Age-Friendly Neighbourhoods

Claudia BALDWIN, University of the Sunshine Coast*

Caroline OSBORNE, University of the Sunshine Coast

Phil SMITH, Deicke Richards Architects

Conference Theme: *Frontiers of Planning: Community and stakeholder engagement*

Abstract

Traditional models of retirement living provide low to high care options derived from care or leisure oriented models that generally result in the segregation of seniors from the rest of the community. Research investigating international aged care provision uncovered innovative models of senior living that have 'unbundled' care and accommodation, providing for greater choice and independence as seniors' needs change. Many of the case studies examined, support not only seniors' preference to age-in-place (Quinn & Judd, 2010), but also foster their engagement in activities or with others, including multiple generations. This affects mobility and reduces social isolation, major contributors to seniors' health and wellbeing (Productivity Commission, 2011). From a design perspective, this trend also liberates the way housing and care options can be conceptualised and designed for seniors, to allow for more innovative approaches. Whilst the WHO (1997) Age-Friendly Cities Guidelines suggests that seniors should be included in decisions that affect them, there are few examples in the academic literature where seniors were asked about their preferences for neighbourhoods or housing.

This gap in the literature inspired a consortium of non-profit, private and public sector partners led by the University of the Sunshine Coast to investigate the neighbourhood and housing preferences of seniors in South East Queensland, Australia. Conducted over one year in 2011, the participative research methodology using PhotoVoice and Design Charrettes allowed seniors to critically inform a brief with detailed design principles and to oversee and advise a design team on suitable housing options. The research culminated in a number of housing typologies that were designed in active collaboration with seniors in design charrettes (Baldwin et al., 2012).

The findings of these two pieces of research clearly converge to provide key lessons in the housing, neighbourhood and care preferences of seniors. A significant outcome was the development of the "Ageing in Neighbourhood" concept, which demonstrates how a range of housing typologies suitable to seniors might fit together in an urban neighbourhood to increase housing choice for seniors. The participatory approach of this research was instrumental in exploring the contribution that planning can make and the trade-offs that seniors are willing to make to achieve acceptable design solutions. This research has broader implications: it demonstrates the value of using innovative methods of engagement to capture the future that seniors envision as they age; and provides insight into planning and delivering inclusive neighbourhoods.

Introduction

Global trends in health care have increased longevity and are foreshadowed to skew demographics in favour of a greater percentage of older people. The World Health Organisation (2007) estimates the number of people aged 60 and over as a proportion of the global population will double from 11% in 2006 to 22% by 2050. Older people typically express a strong desire to preserve their sense of self, maintain their independence, retain control and exercise choice. Baby boomers in particular have experienced much greater

capacity than previous generations to fulfil their desire to remain active and independent and satisfy their preferences (Productivity Commission 2011:51). This has implications for the kind of community that seniors want to live in and the kind of accommodation that will suit their needs as they age.

In general, seniors prefer to 'age in place', that is, to remain in their home and neighbourhood. Government aging policy encourages this to reduce pressure on service delivery systems. The consequences are that as people age, the suitability of their accommodation may not match changes in their mobility needs, partly because of a lack of housing options for those wanting to stay in their community, but not in their home. As communities are seldom designed for mobility issues of older people, the lack for community preparedness can result in social isolation and inactivity with consequent effects on health and well-being.

The alternative is the traditional model of retirement living which provides low to high care options derived from care or leisure oriented models that generally result in the segregation of seniors from the rest of the community. Evidence from the literature and the findings of our research suggest that traditional models of retirement living are a 'last resort' for people as they age, with transition to this model of care often associated with higher care needs. A 'third way' is required that enables other living options for people who wish to continue to live independently in the community they call home. This paper presents insights gained from two research projects, one exploring innovative options for aged care communities; the other, examining characteristics of a community that would enable older people to 'age-in-neighbourhood'.

Methods

1) Desk-top study – International Examples of Innovation in Age-Friendly Environments (Baldwin and Osborne, 2010)

The first research project was completed in 2010 as a desktop exercise investigating international examples of innovation in the delivery of age friendly environments which involved co-location, integrated design, and service provision. The investigation of current developments was initiated in late 2010 through telephone and email interviews with five industry executives and eight key industry associations (including seniors, retirement and aged care, childcare and student associations) in Australia. This 'snowball' technique led to identification of, and email exchange with, ten providers across the globe who were adopting innovative integrated practices.

A concurrent literature search included Australian and international technical reports, academic journal articles, and web sourced information. Although a number of potential case studies reviewed through websites and literature illustrated good practice, they were not included in the assessment as they provided a fairly traditional approach. An example of a sound but traditional approach was considered to be integrated graduated aged care within a facility or site where a resident could move from independent living, to assisted living, to full care equivalent of a nursing home.

While the study was limited by a short timeframe and resources, the findings are sufficiently thought-provoking to warrant sharing with the wider professional community.

2) Photovoice and charrettes – Infill Development for Older Australians in South East Queensland (Baldwin et al, 2012)

The second research project was conducted over one year in 2011. Whilst the WHO (1997) Age-Friendly Cities Guidelines suggests that seniors should be included in decisions that affect them, there are few examples in the academic literature where seniors were asked about their preferences for neighbourhoods or housing. As a result, University of the Sunshine Coast led a consortium of non-profit, private and public sector partners to ask seniors in South East Queensland, Australia about their preferences for neighbourhoods and housing. As a sea change location, the Sunshine Coast is already home to a larger than average older population: 17% in 2010, compared to Brisbane's 11%, and the trend is expected to continue.

The research involved two stages with a different method used at each stage:

1. PhotoVoice was used to gain understanding of older peoples' perspectives and develop principles to guide design, during May and June 2011. Participants were asked to take photos of what makes a neighbourhood and accommodation a good place to live as one ages, and what are the barriers. They shared their photos in groups and developed a narrative using their own words and pictures. These were then synthesised into 15 design principles and presented to a professional urban design team in phase 2.
2. A two-phase design charrette process was used to apply the principles and embed participants' perspectives in design typologies during August and September 2011. Participants worked with the design team in groups to develop innovative housing designs for four selected sites in each city. The research culminated in a number of housing typologies that were designed in active collaboration with seniors (Baldwin et al., 2012).



Figure 1: Designer Phil with seniors at the Sunshine Coast Charrette 2

Findings

1. Desk-top study - International Examples of Innovation in Age-Friendly Environments (Baldwin and Osborne 2010)

While the search identified a number of innovative practices around the world, in this paper we focus on ways that enabled older people to remain integrated into a community: one is home-based; the other facility-based. We give a couple of examples of each.

a) Home-based

The Wesley Homeshare program in Melbourne, Australia facilitates elderly or disabled people to remain in their own home with live-in support in exchange for free rent. Wesley Homeshare matches householders with people of integrity to provide companionship and help around the home through interviewing applicants and assessing needs. Homeshare Coordinators draw up and negotiate agreements detailing the arrangements for living together including specific tasks, sharing or managing living costs. Every agreement is different and designed to suit the circumstances of the match. Homeshare monitors the arrangement.

The MedCottage Relocatable Senior Cottages, USA is designed for frailer people who need assistance. The 12-by-24-foot MedCottage is a state-of-the-art, tastefully decorated transportable hospital standard room, which can be located on a caregivers' property. It features:

- A self contained kitchen with a washer-dryer combination and medication dispenser.
- Bedroom with a hospital standard bed and additional accommodation for a caregiver.
- Universally designed, including a handicapped accessible bathroom
- A communication centre provides telemetry, environmental control and dynamic interaction to off-site caregivers through smart and remote monitoring throughout the modular home eg relays health-related messages (such as medication reminders); a video system that monitors the floor at ankle level, so the patient has privacy but caregiver knows if there is a fall; and among other things, a lift attached to a built-in track in the ceiling that can move a patient from bed to bathroom so the caregiver could avoid heavy lifting.

b) Facility-based

Some of the more innovative models of senior living have 'unbundled' care and accommodation, providing for greater choice and independence for people as their needs change. One of the better-known examples is the Humanitas Foundation Apartments for Life in Rotterdam, the Netherlands, comprised of 200 universally designed apartments housed in high density buildings centred around a village square which includes recreation, medical and shopping facilities as well as gardens and studios. People can organise the care they need while being part of a multi-generational community.

Somewhat similar is the Ocean Street Bondi Development, Sydney, Australia being developed by The Benevolent Society with 128 universally designed apartments housed in two medium rise buildings and one existing building. Housing and care provisions are separate to facilitate individualised care from low to high care needs onsite. While the facility

is for seniors, it enables locals to stay in their multi-generational neighbourhood but in more suitable accommodation with care tailored to their needs as they age.

The Pike Place Market, Seattle USA provides affordable housing for elderly, low income and disabled people in 300 apartments in the historic district, accessible to facilities, employment opportunities, fresh food and public transport.

Other facilities deliberately fostered seniors' engagement in activities with external others, including multiple generations. Ebenezer and Fairview Health Services, Minnesota, USA features a 'campus' with a range of independent living units, assisted living, and dementia care plus an adult day care and child day. Its Inter-generational Day Program includes interaction between children and seniors in a purpose-built intergenerational space featuring a kitchen area, computer centre, arts and crafts and outdoor play area. Other partnerships in the USA are between the care facility and nursing or medical schools, which provide mutual benefits of internships and additional healthcare. At Ithacare Longview, NY activities include an intergenerational choir, theatre and university lectures and tutorials in conjunction with the adjoining University.

2) Photovoice and Charrettes - Infill Development for Older Australians in South East Queensland (Baldwin et al., 2012)

An outcome of the PhotoVoice exercise was development of 15 principles (Table 1), derived from participants' photos, to guide design of neighbourhood and accommodation environments for older people. The highest number of photos were about issues of residence accessibility as one ages, revealing real concerns about lack of universal design in dwellings: for example staircases and narrow steps and non-adaptable kitchens and bathrooms.

Table 1: Principles for Neighbourhood and Dwelling Environments for Older People

Neighbourhood Scale	Dwelling Scale
1) Walking Paths and Walkways	9) Density and Visual Amenity of the built form
2) Proximity to Services and Facilities	10) Universal Design
3) Outdoor Environment and Use of Green Space	11) Sustainable Design Features
4) Public Transport and Connectivity	12) Private and Shared Outdoor Space
5) Pedestrian Safety in Neighbourhoods and Towns	13) Versatile Spaces
6) Safety for Older Motorists in Neighbourhoods and Towns	14) Maintenance
7) Sense of Community	15) Security in the Home
8) Perceptions of Personal Safety	

While many of these principles are consistent with WHO's Age-friendly Cities Guidelines (2007), a significant outcome of the research is the importance to our participants of some additional features: private space for hobbies, private outdoor space (patio), shaded outdoor spaces, sustainable design and visual amenity. Providing living space of adequate size and design that is safe and accessible to outdoor areas such as patios and balconies, can be an economical way of providing useable space and desired visual and practical amenity.

In addition, the design charrettes provided an opportunity for seniors to interact with urban designers and planners, with mutual learning about the challenges of meeting the design principles. Seniors expressed concerns about density and a clear preference for medium rise buildings rather than high rise. However, this may be as much about aversion to aspects often associated with high rise, such as contemporary minimalist concrete apartment designs. Seniors demonstrated a clear preference for visual amenity and the physiological benefits of being able to control the temperature and climate in the residence through accessing natural sunlight and ventilation enabled by thoughtful design. Concerns were also expressed about privacy, noise, and safety in case of electricity failure resulting in need to use stairwells to access the ground rather elevators in multi-dwelling environments. As a result, designs that appeal to seniors (and no doubt other potential residents) are those dwellings that efficiently mitigate the challenges of multi-dwelling living through their design.



Figure 2: Intergenerational interaction adjacent to a university

Some residents expressed an interest in designs that also enabled the opportunity for social exchange. For example, one design that appealed reflected the potential for intergenerational interaction in a multi-building complex adjacent to a university (Figure 2). Seniors liked the idea of one building being for seniors; the other for international or post-graduate students, with the view to social exchange between different age groups and cultures.

Discussion

From a design perspective, this trend also liberates the way housing and care options can be conceptualised and designed for seniors, to allow for more innovative approaches. The findings of these two research projects clearly converge to provide key lessons in the housing, neighbourhood and care preferences of seniors. At the dwelling scale, universal design and unbundled care and accommodation are critical facilitators of enabling seniors to

age in place. Whether living independently or in a seniors' only community, older people value opportunities to be physically and mentally active, involved in work, hobbies, and volunteer work within the broader community. What is required, according to international trends and the preferences of seniors in a South East Queensland context are additional choices beyond staying at home (ageing-in-place) or segregated retirement living. A third way, universally designed dwellings, can provide the opportunity for residents to stay in their home regardless of how their needs, or that of their family, change over the life course.

However, universally designed dwellings are not a panacea for social isolation among senior cohorts. Age-friendly neighbourhoods also need to be incorporated into planning strategies, with safe shaded walking paths, and dwellings accessible to services, facilities and transport as essential components to support seniors' mobility and reduce social isolation. Such active ageing is strongly associated with better health and wellbeing outcomes for seniors (Golding et al., 2010:9). This suggests that age-friendly neighbourhoods and universally designed dwellings unbundled from care will provide more sustainable options that will afford seniors with greater choice and independence.

A significant outcome of the research was a demonstration of how a range of housing typologies suitable to seniors might fit together in an urban neighbourhood to increase housing choice for seniors, allowing "Ageing in Neighbourhood". The dwelling typologies ranged from 2 storey townhouses in a complex of 12 dwelling units, to 3-5 storey options. All typologies were prefaced on the design brief developed in collaboration with the senior participants through the PhotoVoice and design charrette process: incorporating universal design, through ventilation and natural sunlight for each dwelling and communal spaces. While lifestyle and dwelling preferences of the participants dictated that different typologies appealed to different participants, one typology in particular met with considerable approval from residents in both case study locations.

A 2 storey, 12 dwelling complex (in 2 blocks of 6) appealed to seniors firstly due the size of the 'community', and secondly due to the orientation to maximise opportunities for natural light, through ventilation and a sense of privacy and individuality. Of particular interest in a planning context was that in this typology, seniors traded off car parking spaces for a communal area and to reduce the cost of dwellings. The complex was designed to include half of the normal code requirement for car parks (6), separately titled. It could be argued that in moving towards more sustainable urban forms, dwellings in close proximity to public transport and facilities should be eligible for planning code exemptions to reduce the number of car parks, not only to reduce the cost of dwellings but also to provide incentives to developers to incur the marginal expense of incorporating universal design into the development.

Conclusion

The Desk-top study investigating models of care and accommodation for seniors overseas and Australia provides insight into innovative responses to the global trend of population growth and ageing which could be more widely adopted in the Australian context. Of particular merit is the concept of unbundling care and accommodation options for seniors so that choice and independence are at the forefront of planning and policy options. The PhotoVoice and Design Charrette research project demonstrated that seniors in South East Queensland welcomed not only the concepts of the international examples that unbundled

care and accommodation, but also had clear preferences for universal design and other physiological aspects that are important in the South East Queensland climate and culture.

The participatory approach of the PhotoVoice and Design Charrette research was instrumental in exploring the contribution that planning can make and the trade-offs that seniors are willing to make to achieve suitable design solutions. It also identified barriers to innovation in contemporary housing challenges.

Further, the research outcomes illustrate the significance of the participative research approaches used to inform innovative, sustainable approaches to urban planning. Whilst seniors may immediately benefit from these innovative planning approaches, people of all ages benefit from accessible homes and neighbourhoods including young children, parents and persons with physical challenges from every life stage. If planning is to provide places that are for 'the greater good', our challenge then as planning and design practitioners is to genuinely listen and to authentically respond.

References

Baldwin, C. and Osborne, C. (2010). "International Examples of Integrated Models of Care", unpublished report prepared for Churches of Christ in Queensland, University of the Sunshine Coast, Australia.

Baldwin, C., Osborne, C; and Smith, P. (2012). "Infill Development for Older Australians in South East Queensland", University of the Sunshine Coast, Australia,
www.usc.edu.au/seniorliving

Golding B., Foley A., Brown M., and Harvey, J. (2010). *Making Good connections: how community participation enriches learning, wellbeing and a sense of identity in older men*, Report to the National Seniors Productive Ageing Centre, Available at <http://www.productiveageing.com.au/userfiles/file/s%20Learning%20-%20Full%20Report.pdf> accessed 22/04/13.

Productivity Commission (2011), *Caring for Older Australians*, Productivity Commission Inquiry Report, No 53, 28 June 2011, Australian Government, Canberra, Australia

Quinn, J. and Judd, B. (2010). 'Designing the Home to Stay: A Comparison of Visitable, Adaptable and Universal Housing Design Approaches for Older Home Owners', paper presented at the *4th Australasian Housing Researchers Conference*, 5th - 7th August 2009, City Futures Research Centre, The University of New South Wales, Sydney, Australia.

WHO (World Health Organisation), (2007). *Global Age Friendly Cities: A Guide*, WHO Press, Geneva, Switzerland.

(* Corresponding Author – cbaldwin@usc.edu.au)

Harnessing Social Media for Urban Planning: An Overview

Matija BRKOVIĆ, Višnja SRETOVIĆ BRKOVIĆ, Faculty of Architecture, University of Belgrade, Serbia

The widespread adoption of the Internet dramatically altered whole segments of our society. Considering the increasing demand for participation in planning practice and new communication possibilities offered by the Web 2.0 and social media, this paper asks how these two add up. How can planners make use of social web?

1. The Rise of the Social Media

In 2004, O'Reilly Media Web 2.0 conference marked the beginning of the Web 2.0. The term did not indicate a new version of the World Wide Web ("Web"), nor an official specification; instead, it marked a certain point in the evolution of the Web, in which the static web pages became a thing of the past, whereas the interactive web pages filled with the user-generated content became a point of reference. This opened new opportunities and paved the way for the new kinds of the Web applications.

While the term "Web 2.0" has a broad meaning and incorporates different kinds of interactive and user generated content, in this paper solely on Social Media as one of the most prominent applications on Web 2.0. As defined by Kaplan and Haenlein (Kaplan & Haenlein 2010), "Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content". Kaplan and Haenlein further differentiate Social Media on Blogs, Collaborative projects (e.g., Wikipedia), Social networking sites (e.g., Facebook), Content communities (e.g., YouTube) and virtual social and game worlds. Among these, virtual worlds are still not as popular as other types of Social Media and for this particular reason are omitted from this paper.

Beginning with the 21st century, the Social Media literally changed the way we interact socially and provided a platform for communication and exchange of ideas and information. Number of active Facebook users surpassed 1.15 billion in 2013 (Ref. ad. 1)—that is more than 3.6 times the population of US, or almost as the population of India; in 2013 Twitter users generated on average 400 million messages (tweets) each day (Ref. ad. 2); the image below illustrates a trend by depicting 500 million "check-ins" on Foursquare over the period of three months only. The Social Media dramatically altered our personal communication, and many segments of our society—businesses, sciences, arts and governments.



Figure 1: 500 million “check-ins” on Foursquare (source: <https://foursquare.com/infographics/500million>)

2. Social Media from the Planning Perspective—the Application Scenarios

Parallel to the evolution of the Internet, the planning practice evolved too. We witnessed a shift from the traditional, technical, top-down planning paradigm, to a more collaborative (even bottom-up) approach to city planning. Communication between different actors and bodies, and involvement of public throughout the planning process and decision-making, has become a standard component of planning practice.

Bearing in mind the increasing demand for participation in planning and easier than ever communication possibilities offered by the Social Media, the current challenge is to link the two. The crucial question thus is—how can planners and planning itself benefit by using the Social Media?

Social media provide different opportunities, like:

- Population sampling and data mining (non-participatory);
- Providing/delivering one way information or making announcements,
- Communicating, surveying, asking questions, asking for opinions, requesting feedback;
- Civic engagement, community empowerment and collaboration.

There are many ways planners can use social networking services in their everyday planning practice. Different approaches can be roughly divided into the following groups:

- Using existing (vertical) social networking services;
- Using services built for the specific planning purpose/tasks;
 - Establishing a new service, built from the ground up;
 - Opting into the existing state-level service;
- Adding new (horizontal) layer atop of already established services;
 - Starting a new service, built from ground up;
 - Using existing service;

Each approach has its benefits and shortcomings, which have been explored and the results are summarized in the next passages. Different cases or examples from the world practice have been taken to illustrate these approaches. The list of the used examples is not meant to be conclusive, nor does it necessary represent the best ones.

Using existing social networking services

Social networking services such as Facebook, Twitter, or Foursquare can be used to expand the outreach capabilities of the government agencies, including the planning related ones, and to broaden the abilities to interact with public. The typical use case scenarios are sharing information, plan mock-ups, making announcements, conducting polls, asking and answering questions, brainstorming, etc.

This approach is widely used. For example, in 2013 the Victorian government used Facebook, Twitter and YouTube to share ideas and engage citizens in a consultation process for the preparation of the New Metropolitan Planning Strategy for Melbourne.



Figure 2: Plan Melbourne Facebook page (source: <https://www.facebook.com/PlanMelbourne>)

Similarly, the city of Louisville is currently using Twitter as a platform to gather ideas and visions about the future of Louisville and to enable public to comment and discuss issues with community leaders.

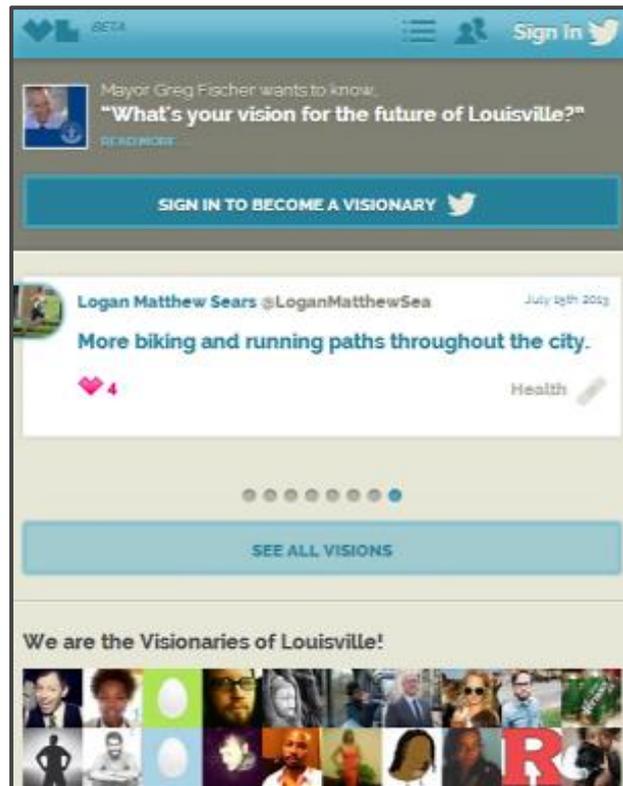


Figure 3: VizLou web page showing its Twitter feed (source: <http://www.vizlou.org/>)

Social networking services can be used for data mining too, without the explicit permission from the users. Even a simple query “New York parks” at Foursquare.com provides a map indicating a “rank” of each park, together with the users’ comments that may contain some valuable information. However, this method does not fall in the domain of citizen participation, and generates some ethical questions that should not be overlooked.

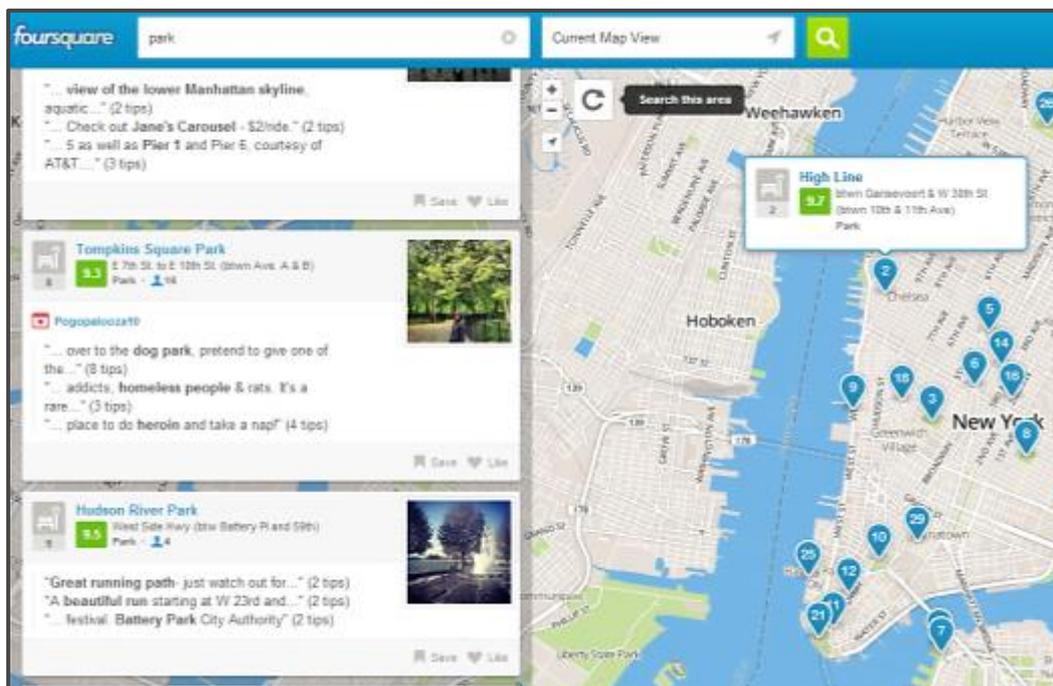


Figure 4: New York parks—Foursquare (source: <http://www.foursquare.com/>)

There are some advantages by using the existing social networking service as compared to the others, conventional approaches, such as:

- There is already the existing user base,
- They are easy to implement,
- There are no maintenance costs.

However, when deciding for, or using this approach there are issues that are to be considered:

- These are privately owned services
 - Privacy issues
 - Who owns information?
 - Specific service policies may limit the scope of their use
- They are not fit for every need
 - User interface is often not appropriate for planning purposes, which may limit the scope of its use
 - Social networks tend to reinforce a positive approach (e.g., there is a “Like” button, but not “Dislike” etc.)
- User bias—careful research is needed to determine the user profile;

The existing social networking services require planners to adapt to the specifics of the service, instead the other way round. Taking into account the advantages mentioned above, this approach could be used as an excellent supplementary way for informing the public, conducting polls, or communicating and discussing the planning issues with the citizens.

Using purposely built service

On the other end of the spectrum, the second most common approach to the use of Social Media are the services that are specifically built to enable e-participation in planning. We can differentiate the two subtypes of these solutions: first are the state-level services that municipalities can opt into; second are the stand-alone custom-built solution.

Services such as System48 in Inđija (Serbia) (Brković & Sretović 2012) or MansfieldTomorrow are examples of this approach. System48 city service is designed to improve cooperation between the local government, municipal departments, and public utility enterprises on one hand, and service recipients on the other. It allows citizens to report different issues easily. The value of the system for planning purposes rests within the stage of the on-going and post-project monitoring, as well as a means of securing relevant information on vulnerable sites, environmental quality, specific issues that require immediate planning responses, etc.

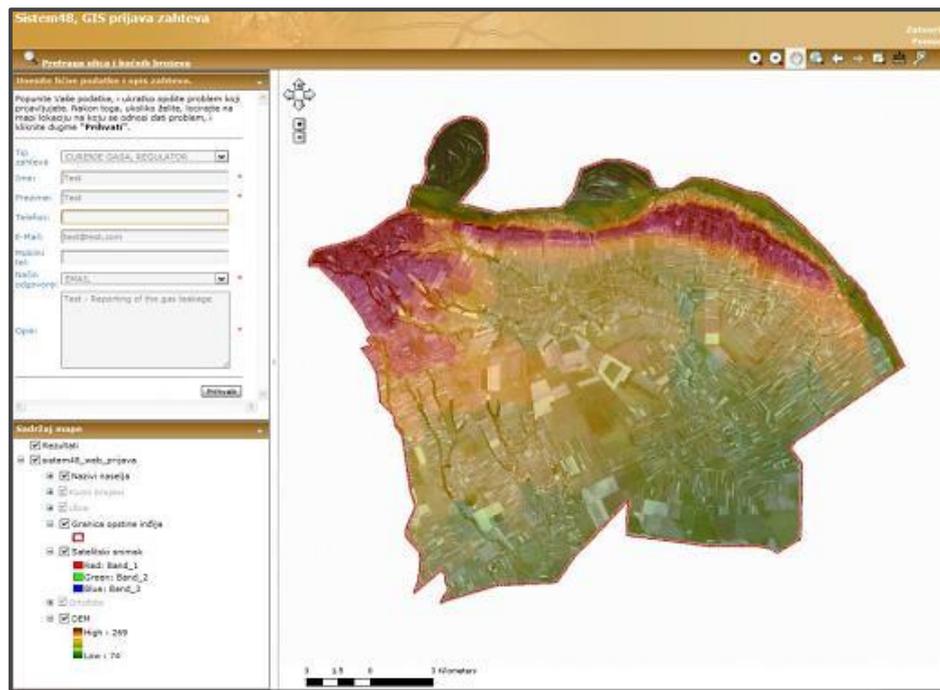


Figure 5: Reporting an issue and pinpointing its location on the web-based map (Source: http://gis.indjija.net:7777/sistem_web_prijava/)

MansfieldTomorrow is a website based on Shareabouts framework (Ref. ad. 3) created with the aim to allow public to “address issues such as where new development should occur, what that development should look like, how to promote local businesses and support farms ... make living in Mansfield more affordable for working families, and ... preserve the essential characteristics of our town.” (Ref. ad. 4)

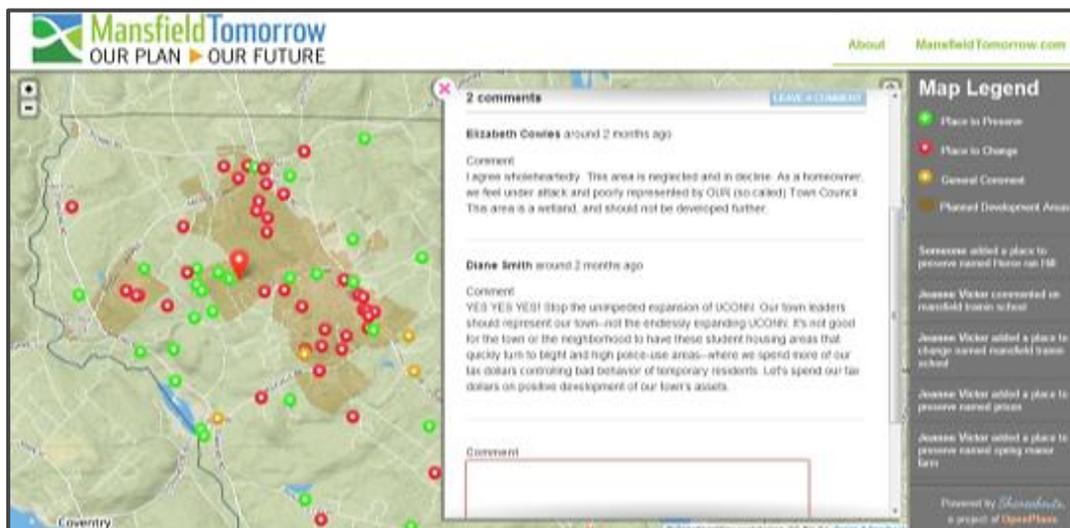


Figure 6: MansfieldTomorrow web app (source: map.mansfieldtomorrow.com)

The benefits of this approach are:

- Allows flexibility and custom tailoring to the specific needs for planning purposes;
- Complete control and ownership of data;
- Allows tight integration with city GIS;
- Allows tight integration with city services and/or municipal departments;

However, whilst it does have its advantages, this approach also has the shortcomings. The degree to which these shortcomings come across depends on whether the service is created

from scratch, or is it a state-level service that municipalities can opt in. The shortcomings fall into one or more of the following:

- Effort, time, money and people needed to build the service;
- Maintenance costs;
- In order to function, it is necessary to attract users first;
- User bias—careful research is needed to determine users' profiles;

Adding horizontal layer atop of the already established social networking services

This is a somewhat novel approach taken by services such as SeeClickFix from US, or Urbanias from Brazil. It tries to combine the benefits of using the existing social networking services (particularly its established user base), with flexibility of custom/purposely build solutions. Furthermore, it tries to traverse across the multiple social networks, further extending the user base and the ways it can be interacted with. Similar to the purposely-built solutions mention above, this approach also can include privately owned services that municipalities can opt into or stand-alone custom-built applications.

SeeClickFix is a mobile phone and a web tool that allows citizens to report non-emergency issues, communicate with public officials, add comments, suggest resolutions, or add pictorial documentation. It also connects with other social networks, allowing the reports to be made via Facebook application or Instagram. Likewise, Urbanias from Brazil uses a Facebook app and a mobile app with similar functions.

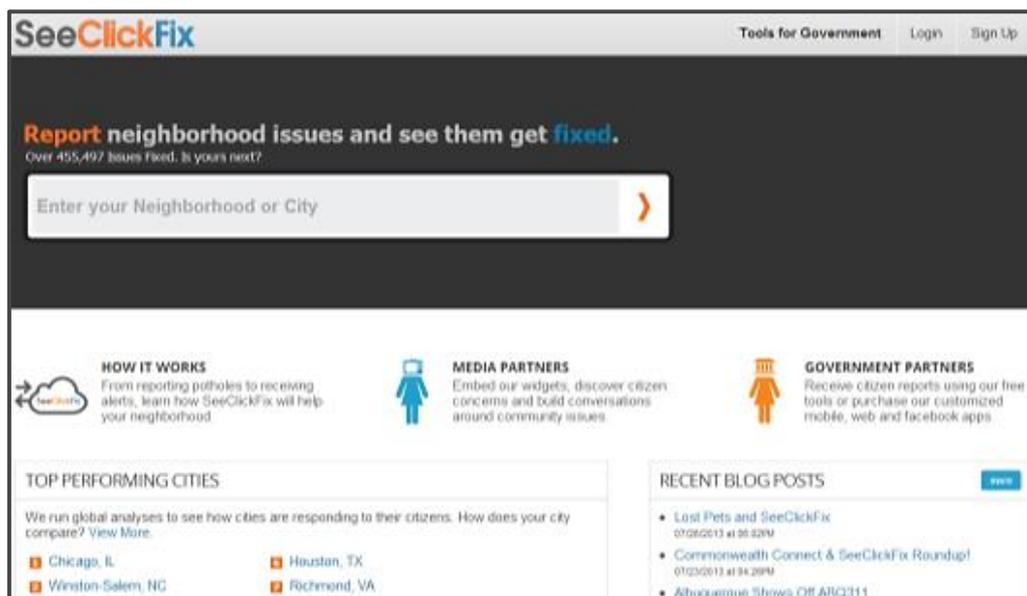


Figure 7: SeeClickFix web reporting (source: www.seeclickfix.com)



Figure 8: Urbanias Facebook app (source: <https://www.facebook.com/Urbanias>)

Whilst somewhat more difficult to implement, this approach does indeed combine best of the both worlds. Likewise, it also inherits some of their weaknesses, such as building and maintenance costs and a possible user bias. In addition, even though it does start with an existing pool of users, it still needs to attract them to actually use the service, though this is somewhat easier than starting with a no user pool at all.

3. Concluding remarks

The assessed capacity of the Social Media as applied to planning is shown in the following table:

Service	Flexibility (more is better)	Costs (less is better)	Ease of attracting users (more is better)	Achievable/likely participation (more is better)
Existing services	■	■	■■■■■	■
New service	■■■■/■■■■■ (opt into/new)	■■/■■■■■ (opt into/new)	■■/■ (opt into/new)	■■■/■■■■■ (opt into/new)
Horizontal layer	■■■/■■■■■ (opt into/new)	■■/■■■■■ (opt into/new)	■■■■/■ (opt into/new)	■■■/■■■■■ (opt into/new)

Figure 9: Comparison of different approaches to the use of Social Media in planning

One can observe that the flexibility is directly proportional to the achievable/likely participation levels, and approximates cost of the service. The users are easiest to attract when a service is based on the existing social network, which is already in use and to which the users are accustomed to and know how to use it.

With regards to the participation ladder as defined by Weidemann and Femers (Carver & Peckham 1999), the Social Media are in the domain of limited participation. This stage of the ladder implies deployment of the particular modes of public involvement and the ways of acquiring their responsiveness. Participants are usually required to obey the timeframes as defined by planning authorities, and have to comply with existing laws and institutional

arrangements. Rarely does the public have a genuine power in starting the planning process or carry it out. Finally, it is only in the domain of purely theoretical study that the possibility there is for what Shirky (Shirky 2005) describes as collaboration instead of institutions.

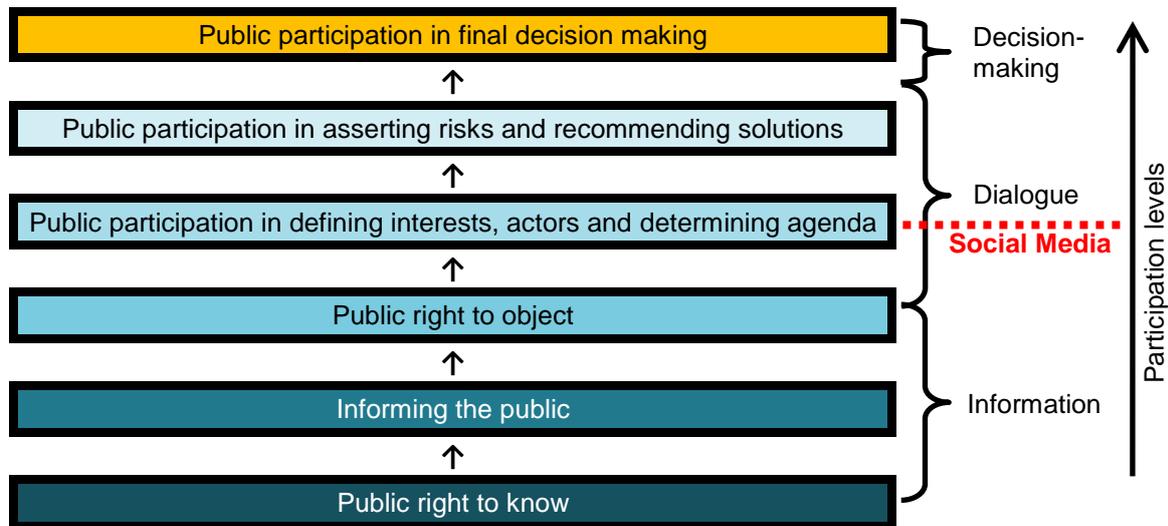


Figure 10: Participation ladder, taken and adapted from (Carver & Peckham 1999)

The Social Media should be understood and taken as a medium that support the participatory process, while they do not generate it by themselves. In order to make them functional and operational, the adequate legal, technical and administrative support is necessary. The legal component is of a particular importance and it presents the key factor in making the socially responsive environment within which the citizens are given a prominent role, together with a workable model of interaction between local governments and their citizens. Only there where the citizens' involvement in public affairs is guaranteed, the Social Media may play an important role throughout the planning process.

Notwithstanding the above, the successful application depends on the citizens' readiness to use them, and their willingness to become the active constituents of the planning process. Thus, one of the challenges planners and all those who are involved in making Social Media usable for planning purposes are faced with, is to create the user-friendly and easy to approach modes of their use.

The level of e-participation depends on the complexity and refinement of the technology in question. As a rule, the complex and high-tech technologies are used by rather a limited poll of users, while the more simple ones are available to a much larger audience. „The effects of use correlate to the level of sophistication of the instrument; the more sophisticated the instrument is the better results are obtained, while their accessibility and use adversely correspond, the simpler they are the wider their use there is“ (Bajić Brković 2006). Furthermore, „in reaching a wider audience there is a trade-off between making it as simple as possible for any user to be able to participate and knowing exactly who it is.“ (Macintosh 2004)

In order to use Social Media efficiently for planning practice, it is necessary to:

- Encourage inclusion of all groups, through the promotion of systems, rising public awareness, and enabling an access to modern technology;
- Choose a right tool, or multiple tools, in addition to the traditional ones;
- Acknowledge the fact that the acquired data or input do not represent public in general nor the entire population, but only its subset, and:
 - carefully study users of the system in order to determine exactly which group it does represent, and use the output accordingly,
 - do not use these systems as a sole or a main source of data, instead, use them to supplement or verify data obtained in other ways;

The Social Media should not exclude the established ways of public participation; instead, they offer the complementary modes for doing things, and present a promising alternative for those who choose to use them. The Social Media and conventional or already existing e-based modes are not mutually exclusive—they complement each other and provide an option for better planning.

4. Acknowledgments

Research and writing of this paper was done under the project: *Spatial, environmental, energy and social aspects of urban development and climate change—mutual influence; PP1: Climate change as a factor of spatial development of settlements, natural scenery and landscape; Project no. TP36035* funded by the Ministry of Education and Science, Government of the Republic of Serbia.

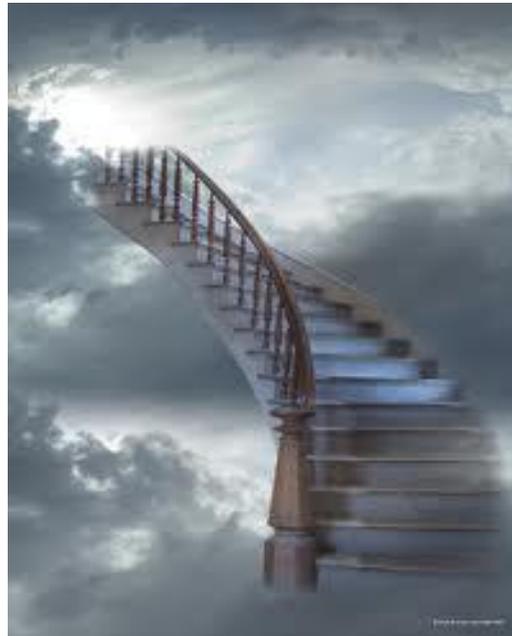
5. References

- Bajić Brković, M., 2006. Fenomen digitalnog grada. In *Zbornik radova: Upravljanje održivim prostornim razvojem gradova*. Belgrade: Institut za Arhitekturu i Urbanizam Srbije – IAUS.
- Brković, M. & Sretović, V., 2012. Urban Sensing – Smart Solutions for Monitoring Environmental Quality: Case Studies from Serbia. In *Congress Proceedings. 48th ISOCARP-International Society of City and Regional Planners World Congress: Fast Forward: Planning in a (hyper) dynamic urban context*. Perm, Russia. Available at: http://www.isocarp.net/Data/case_studies/2215.pdf.
- Carver, S. & Peckham, R., 1999. *Geographical Information and Planning* J. Stillwell, S. Geertman, & S. Openshaw, eds., Berlin, Heidelberg: Springer Berlin Heidelberg. Available at: <http://www.springerlink.com/index/10.1007/978-3-662-03954-0> [Accessed July 29, 2013].
- Kaplan, A.M. & Haenlein, M., 2010. Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53(1), pp.59–68. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0007681309001232> [Accessed May 22, 2013].
- Macintosh, A., 2004. Characterizing e-participation in policy-making. In *37th Annual Hawaii International Conference on System Sciences, 2004. Proceedings of the*. IEEE, p. 10 pp. Available at: <http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=1265300> [Accessed February 4, 2013].
- Shirky, C., 2005. Clay Shirky on Institutions vs Collaboration. Available at: http://www.ted.com/talks/clay_shirky_on_institutions_versus_collaboration.html.

1. <http://newsroom.fb.com/Key-Facts>
2. <https://blog.twitter.com/2013/celebrating-twitter7>
3. <http://www.shareabouts.org/>
4. <http://www.mansfieldtomorrow.com/>

Still climbing the stairway to heaven: public participation in planning

Paul BURTON, Griffith University, Australia



1. Introduction

Arnstein's famous conceptualization of public participation in planning as a ladder helped to illustrate the broad range of possibilities that exist when engaging the public in matters to do with the development or implementation of plans. While this conceptual ladder has been extended, turned into a loop and subject to other geometrical contortions, it has also been used in a way that Arnstein did not perhaps fully intend when she first proposed it: the ladder has been given a moral dimension in which joint decision making between planners and the public and the co-production of plans is the best imaginable form of public participation in planning (Collins & Ison, 2009). The manipulative and therapeutic lower rungs are often used to describe participatory exercises which are taken to be insincere or not genuine and which are a long way from the ideal of co-production. In this sense the ladder has come to serve as a stairway to what many would see as participatory heaven.

This paper challenges this moral dimension to Arnstein's ladder and its derivatives, whether it was her intention or not, and proposes an alternative approach based on a more systematic consideration of different possibilities of participation in practice as well as in theory. It reflects broader debates in political theory in which representative forms of democracy have developed in response to theoretical and practical concerns with more direct and participatory forms and suggests that in judging our participatory endeavours we should recognise the contingent nature of fitness for purpose and beware of applying universalist notions of democratic value.

2. Democratic theory and participation

While the various forms of public participation in politics developed by Pericles and described by Aristotle that emerged in Athens in the 5th century BC are often taken by contemporary advocates as the epitome of democracy, there is a tendency to forget that other notions of democracy exist and indeed developed in response to a substantial and significant critique of participatory democracy (Pennington, 2010). This is somewhat surprising as representative democracy is easily the most popular form chosen by institutions that consider themselves democratic as the basis of their organization of day to day government, even though critics speak of a crisis of legitimacy affecting many representative forms of government.

The Athenian principle of government in which 'the people' govern themselves begs a number of questions: what constitutes 'the people'; are all matters of government subject to popular rule; and does the scale or extent of 'the people' have any influence on the practicalities of popular government? While 'the people' is sometimes taken superficially to mean every member of a particular institution (citizens of a nation state for example, or residents of particular neighbourhood), any scrutiny of the term usually reveals a number of caveats and exclusions. In Periclean Athens the *demos* comprised property-owning males and women and slaves were excluded. In many contemporary nation state democracies the right to participate in elections is limited to citizens over a certain age, but excludes certain other groups including (in Australia) prisoners serving sentences of three years or more, people of unsound mind and convicted traitors. The extent to which other groups of people are considered suitable for participation is discussed in more detail later in the paper. The second question raised above concerns the scope of popular politics: is it sensible or indeed possible to subject each and every matter of day-to-day governance to the direct will of the people? It is not too difficult to imagine a somewhat Pythonesque scenario in which the people spend all of their time in the agora (or its contemporary equivalent) deciding what is to be done and as a consequence have no time to actually do anything!

Democratic theory has long wrestled with the problem of how and where to define a sensible boundary between matters of broad policy direction that can usefully be determined directly by the public and more prosaic matters of day-to-day governance which may be better left to some combination of political representatives and public officials skilled in implementing policies and programs. The final question relates to scale and to the suggestion that at some point the size or scale of a body of people becomes too large to be able to cope with direct participation in all forms of public decision making. While Periclean Athens is sometimes taken to represent the ideal or even the maximum scale at which direct democracy is possible, scholars have shown that not all citizens did in fact fulfill their civic obligation to participate and that active participation was in fact becoming even then the preserve of a particular class of political enthusiasts.

The fact that all kinds of institutions (including universities, clubs and societies, companies and charities) tend to delegate responsibility for the day to day running of the institution to a small number of members (including some employed specifically to carry out these tasks) suggests an innate recognition of the practical difficulties of involving everyone in every decision that has to be taken. Of course the way that those delegates are then chosen, held to account for their behaviour and subject to censure or recall is the very stuff of representative political theory. But there are arguments other than the purely practical for assuming that the active participation of everyone in everything is less than ideal and that limiting the power of the whole or the majority of members of any particular institution may be beneficial. Majorities sometimes (perhaps often) choose to behave badly towards minorities. Rawls' notion of justice as fairness suggests a set of principles including the promotion of liberty and equality and the recognition of difference that most people would agree to if they did not know at the time what their social position was, with these serving to limit the power of majorities to persecute minorities.

But if we are to avoid the problems of polarization in which participatory and representative forms of democracy are treated as mutually exclusive, then we should consider the circumstances in which different forms are more or less appropriate and in which they might mutually support each other. And of course this is what happens in practice as participatory forms of politics are developed alongside representative forms. Representative forms are often best for determining broad political direction and overall rules or policies, while more participatory forms can be more effective in deciding particular applications. The interface between these two forms and practices often reveals tensions and questions to be answered: how should differences between participants be resolved; can formal responsibility for a decision be delegated to others; is the right to be heard the same as the right to have your way, and so on. In concluding this section I would simply say that these questions must be answered on a case by case basis and not by resorting to an *a priori* claim that one form of democracy is inherently and self-evidently superior to another.

These relatively abstract arguments about the nature of democracy and the participation of citizens in democratic politics provide the context for a more focused consideration of the nature of public participation in planning.

3. Public participation in planning

Public participation has been an accepted feature of planning for almost as long as planning has existed as a statutory responsibility of local or metropolitan governments. But in the UK in the 1960s the publication of a report, *People and Planning*, into public participation in planning by the Skeffington Committee marked its elevation into a matter of considerable professional interest and public debate. Broadly speaking there was support for the idea that many of the perceived problems of planning could be alleviated by promoting greater public participation, although as many critics observed the nature of participation varied from the right to inspect and comment on draft plans through to some rather vague notion of engagement in the process of preparing plans. Not all critics saw greater participation as necessarily entirely beneficial and Lewis Keeble (1961), then of the University of London, spoke of giving planners a freer hand from 'month by month lay dabbling', while Colin Buchanan (1969) suggested that if planners performed to a higher professional standard then the demands for greater participation would dissipate or even disappear.

Damer and Hague (1971) in their critical review of public participation in the UK, note the importance of a number of factors in explaining its growing prominence. These include American planning experience and Kennedy's promotion of 'maximum feasible participation' as a key principle in his war on poverty; increasing interest in participatory rather than representative forms of democracy; clear evidence of bottlenecks in the operation of most planning regimes and an emerging concern to promote new values in planning. However, they are especially critical of Skeffington for a number of reasons. First, they claim it has no theoretical context which might explain how greater public participation and what might now be termed planning performance are causally connected. This leads, secondly, to a tendency to see participation as a way of increasing public knowledge of planning which would in turn lead to a more consensual and productive form of planning. As they note, this simplistic and naïve view of the nature of planning obscures the fundamental social and political conflicts that underpin much planning and other forms of state intervention. It was in this environment, albeit on the other side of the Atlantic, that Sherry Arnstein developed and promoted her ladder of participation.

To a great extent this lack of theoretical groundedness and a degree of political naïveté continues to characterize much writing about public participation in planning (Innes & Booher, 2004). The most up to date statement on public participation from the Planning Institute of Australia (PIA) begins by noting that we are all part of many communities (of interest, affiliation and place for example) and suggesting that members of these

communities 'reasonably seek to participate' in decisions that affect them. The PIA statement goes on to say that 'careful consideration of many points of view and competing interests is an essential part of good professional practice' and that 'good planning practice involves maximizing opportunities for participation in planning'. However, there is no consideration in detail of what constitutes 'good planning practice' or 'good professional practice' other than this procedural claim that it entails a degree of participation. Nor is there any calibration of the relationship between the two, so that we might be able to anticipate how much more participation might be needed in order to achieve a certain improvement in 'good planning practice'.

In the next section I propose and describe three questions that should be considered by anyone responsible for organizing and managing any participatory exercise in planning. The contention is that by contemplating these questions and coming to a view that is suitable for the particular circumstances, the exercise will be more likely to satisfy the expectations of both organizers and participants.

4. Principles of participation

In this section I present briefly three questions that should be considered by anyone organizing any program of public participation in planning. The questions relate to three important principles of participation, namely: the right and the obligation to participate; the scale or extent of the participatory exercise; and the nature of the participatory relationship.

Who should participate?

In relation to the question of who should participate, it is worth beginning with the most extreme case and considering why it should be anything other than everyone. However, we might propose that everyone in practice means everyone with the status of citizen, in other words we might feel justified in excluding those without the right to vote in local, regional or national elections. But there might be other grounds for restricting the right to participate, for example to those who are knowledgeable about an issue or to those who are enthusiastic about participating. In other words, various criteria could be applied in selecting from among a large group with a formal entitlement to participate. The value of organising around enthusiasms described by Bishop and Hoggett (1986) suggests we should select only those who are sufficiently motivated and interested to put themselves forward and avoid trying to cajole the uninterested, while remaining conscious of Michael Waltzer's warning of the dangers of rule 'by men with most evenings to spare' (1970: 235). The capacity and willingness to listen to a variety of alternative positions before coming to a view might also be used to exclude those with existing unalterable viewpoints in the same way that biased or prejudiced citizens might be excluded from a trial jury. One might select only those with a certain level of knowledge or experience of an issue. Opinions on the significance of this are divided: for example Arblaster describes an optimistic view of civic capacity in saying, '...political wisdom is not a matter of specialised knowledge, but something in which everyone has a share...' (1987: 21), while on the other hand referring to Schumpeter's less flattering view of the 'proven ignorance, irrationality and apathy of the people' (1987: 53). Thomas Jefferson proposed a fine resolution to this apparent dilemma when writing to William C Jarvis in 1820 (Peterson, 1984) saying,

"I know of no safe depository of the ultimate powers of society but the people themselves; and if we think them not enlightened enough to exercise their control with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion by education."

Finally, the principle of random selection might be adopted on the grounds that it is inherently fair in avoiding bias during selection. It was used as one of the criteria in filling positions of public office in ancient Athens and has long been used in the selection of jurors for criminal trials. It serves as the basis for distributing substantial sums of money through national

lottery schemes and has also been used for over half a century in drawing unbiased and representative samples for social survey research. Moreover, more than one criterion might be applied, so that participants had not only to be interested but also knowledgeable in order to qualify for selection.

This discussion illustrates that a number of legitimate positions can be taken when thinking about who should be encouraged or allowed to participate in planning exercises. No one is self evidently superior and to some extent the most appropriate selection criteria will depend on the nature and scale of the exercise. But before considering this, we should think about the inclination and the obligation of citizens to participate?

Some may not be interested in participating in a particular debate, feeling that it is of no great consequence to their lives, while others may feel they know so little about an issue that their contribution to any public debate would be worthless. Others may simply be too busy going about their lives to have any time for such activities. Whether citizens have a more formal obligation to be active and to participate is another matter and as noted above the legal obligation on Australian citizens to vote in elections is somewhat peculiar in comparison with most other democracies. A more nuanced position might therefore acknowledge that not every citizen will choose to participate in every, or indeed any public decision making process that is open to them and that there are valid reasons for choosing not to do so. It is worth noting that for some, the disinclination to participate (in politics generally rather than in planning in particular) is evidence of underlying feelings of powerlessness or disempowerment that require positive strategies to remedy them. The assumption is that active citizenship is the norm, but if it is not the case in practice then there must be forces at work that are undermining this norm.

In summary, it is perhaps most important to recognise that reasonable and respectable arguments can be put forward for a variety of different selection principles. These principles can entail anything from the selection of all members of a particular constituency, through many to only a few. Thus when it comes to evaluating the success of participatory initiatives we must ensure that we are applying the relevant criteria of success rather than assuming a greater number of participants is always better than fewer.

Scope of decision and scale of participation

Decisions vary in terms of the extent of their impact and we can conceive of this variation as a continuum. At one end of the continuum are decisions that affect everyone in a particular constituency or jurisdiction, while at the other end are those affecting only a few. We can label these extremes as strategic (affecting all) and individual (affecting few) and perhaps define a point in between as programmatic where the impact of a decision is felt by an intermediate grouping somewhere between the many and the few. This continuum can exist both within and across spatially nested constituencies so that a strategic decision could apply to a neighbourhood, a city of which it is a part, a region of which it is a part and a country of which it is a part and so on. A similar way of conceiving this continuum is to distinguish between decisions about constitutional matters (eg who to include and the broad terms of engagement), about policy matters (eg principles of entitlement) and about the application of constitutional or policy decisions to specific cases (eg should I be granted a particular welfare benefit?).

The significance of this conceptual continuum is three-fold. First, as the number of people affected by a decision increases, so there is a corresponding increase in the number who can claim a right to participate in the making of that decision on the basis of being affected by it. Other things being equal this increases the likelihood that not everyone will choose to exercise this right if it is granted and, more significantly, that a smaller sample of people will be selected to participate. The political challenge is to be able to justify the criteria for selection and hence cases of non-selection, in other words, why was I not selected?

Second, strategic level decisions affecting the many often serve to constrain lower level decisions. In this sense they help set the rules or priorities applied at lower levels and may

therefore be important in influencing the outcomes of subsequent participatory exercises. For example, regional land use plans typically determine the total requirement of land for new housing developments and identify areas for growth. District level plans then identify particular sites and finally individual planning applications are determined on the basis of specific residential patterns and house designs. While an individual application may be rejected on the basis of design, the case for growth will already have been accepted at a prior and more strategic stage.

Third, the actual significance of strategic level decisions can appear to be inversely related to popular perceptions of their impact and hence to the propensity to participate. Thus, people are often more inclined to participate, whether by unfettered choice or following an invitation, in small scale and parochial decision making exercises than in broader and more strategic arenas. Managers of participatory exercises have long struggled to present strategic choices in ways that are meaningful and comprehensible to the large populations affected and stimulate popular interest and excitement. In contrast, very localised proposals (to close a school or post office or to open a residential home for recovering drug addicts, for example) often generate intense local interest and demands for participation through attending public meetings and signing petitions.

The nature of participatory relationships

The third question refers to the nature of the participatory relationship, or the relationship between those people who choose to, or are invited to, participate and those who retain formal responsibility for making the decision in question. At one end of the spectrum of possibilities, formal responsibility for taking a decision is handed to all participants, for example in a referendum, while at the other end participants are allowed only the most cursory degree of involvement and in ways that have no meaningful impact on the decision taken. Arnstein's ladder may have been the first and most well known conceptual representation of this spectrum, but others have offered variations on this theme including the International Association for Public Participation (IAP2) public participation spectrum (IAP2, no date), which serves also as the basis of PIA's position on public participation in planning.

The problem with Arnstein's ladder and subsequent variations is that it embodies a set of normative assumptions about the relative merits of the ends of the spectrum, without fully articulating and justifying them. Thus it is assumed that delegating the power of decision making to the people (however defined and delineated) is not only a good thing, but a better thing than simply asking 'the people' to choose between a predetermined set of options. This assumption only holds for certain models of democracy, typically those rooted in the participatory conceptions of Barber, Pateman and Hirst or further back in the work of Mill or Rousseau. In alternative conceptions, seen in the work of Schumpeter or Sartori and in Burke's notion of representation, popular participation does not serve as a yardstick for democracy and if anything signifies the potential for wasteful or even oppressive political activity. Unless we take the debate between representative and participatory forms of democracy to be settled in favour of the latter, we cannot accept that involving more people in co-decision making is necessarily and always for the best.

From this it follows that there may be situations in which simply presenting information, clearly and concisely, is the most appropriate. For example, regardless of how it was arrived at, presenting information about the composition and powers of a new state planning agency may be entirely appropriate and need not (indeed should not) invite comment on whether or not the decision to do so was good one. On the other hand, when asking for input to a long term plan for the pursuit and management of growth in a jurisdiction, it is sensible to include as many people as possible and be as clear as possible about the scope and parameters of the plan. Depending on the nature (ie the scope and scale) of the activity, judgments can be made about who it is best to invite to participate and the terms on which they might do so. These judgments have, of course, to be defended and some may be unconvinced by the

arguments and chose not to participate or may indeed choose to establish alternative channels and forms of participation.

In the next section we look in more detail at the application of some of these principles in the practice of public participation in planning.

5. Applications

It has become increasingly common in planning regimes in Australia and other developed countries to follow what is often described as a neoliberal agenda of reform in which lighter touch regulation accompanies a more streamlined and expeditious process of planning. As part of these processes the costs of more extensive programs of public participation and engagement often receive more attention than the benefits and streamlining tends to result in participation focusing on processes of plan making rather than on implementation and the assessment of development proposals.

The logic of this approach rests on the not unreasonable assumption that plans, in whatever form they take, serve as the basis for any subsequent assessment of development applications and so it is sensible to invest time, expertise and effort, including the time, expertise and effort of the public, in preparing plans that are as good as possible, however that may be judged. This is not to say that public participation in development assessment ceases or is reduced to an entirely tokenistic process (although this is often how unsatisfied opponents of particular development proposals feel), but the argument is made that it is better to focus participatory effort in developing a plan that has broadscale applicability than on a large number of specific development applications that would otherwise have to be assessed without an overarching plan or set of assessment principles. It is important to remember that these arguments are more about the relative balance of effort than about more absolute positions, although they are sometimes conducted in these terms.

A second notable aspect of this argument is that it reinforces a technocratic notion of planning in which it is possible to differentiate without too much difficulty between the legitimately political and the properly technical aspects of decision. This has of course has been the subject of intense debate among planning theorists and practitioners for many years and shows little sign of either abating or being resolved to the satisfaction of all. In brief the argument is that the process of plan making is necessarily political, both in the sense that it involves elected politicians and that the public at large have an acknowledged role to play in making choices about (for example) the desired pace and pattern of growth, the extent to which zones should be used to regulate land uses and the scope of aesthetic judgments about urban design. The argument continues that the assessment of development applications against the criteria and principles of an agreed plan can then be treated more as a process of professional and technical judgment with more limited opportunities for public participation. The opportunity for third parties, in other words neither the proponent nor the assessor, to lodge legitimate appeals against planning decisions is clearly a significant factor in the way the assessment of development applications is conducted in any particular planning jurisdiction.

In his recent memoir on life as a Minister in the New South Wales government, including time as Planning Minister, Frank Sartor reflects on reforms he introduced in an attempt to improve the planning system of that state (Sartor, 2011). Among measures to strengthen the metropolitan scale of planning, especially around Sydney, and to make state-wide investment in urban infrastructure more secure, he advocates the 'depoliticisation' of local government level development assessment. While this may appear to reveal a surprising degree of political naïveté in someone whose book describes decades of political manoeuvring within the New South Wales Labor Party, it reflects the practical experience of

contemporary planning in many Australian cities. His comments on public participation are especially noteworthy,

Current processes for public consultation have not engendered a culture of constructive debate, problem solving, mutual respect or consensus building. Rather, we have developed a culture of confrontation, mistrust and sloganeering by competing interest groups.' (2011:204)

It is unlikely that this description is limited to planning in New South Wales, but applies much more widely and could be taken to describe the norm rather than the exception. It is certainly a long way from the Habermasian ideal speech situation sometimes envisaged for planning (MacCallum, 2009) and even from the nuanced conceptions collaborative planning described by Patsy Healey (1997). But it does serve to illustrate the persistent gap that exists between our views of how we would like public participation in planning to operate and the stubborn reality of it in practice.

6. Conclusions

Debates in planning sometimes descend rather too quickly into polarized arguments in which absolutist positions are taken. Thus we can find ourselves arguing for or against participation *per se*, rather than treating it as a variable that we can engage in to a greater or lesser extent. Similarly, we can find ourselves driven by the moral imperative associated with many conceptualizations of participation and feel obliged to move towards the apparent heaven in which everyone affected by a decision is actively involved in preemptory debates and indeed in taking the decision itself.

If we are to continue to devote time and effort to encouraging and enabling public participation in planning in its various forms, then we should be reasonably clear about the potential benefits to be obtained in doing so and perhaps even more clear about whether these benefits are achieved in practice. We might expect that after at least fifty years of advocacy for greater public participation in planning we would have achieved a reasonable degree of clarity about these impacts from a series of research projects and evaluation studies. Unfortunately this is not the case. While there are some well designed and robust studies of the impact of participation, they are not yet commonplace and not all are in the field of planning whether we define this in terms of land use planning, urban and regional planning, spatial planning or strategic planning. There are more studies that take the form of practice stories and while these are perfectly legitimate research designs in themselves, they do not always allow a more comprehensive assessment of the value of public participation in planning.

In this respect it is not easy to answer the question: does participation in planning make a difference and is the difference we hope for? In part this is a methodological or research design challenge, but also an ideological one in that for some (perhaps many) the benefits of participation or rather of more than less participation can be taken for granted. Echoing another statement of democratic principle, advocates of participation hold these truths to be self evident. For the more skeptical, there is however a substantial methodological challenge in measuring the beneficial impacts of participation or in comparing its costs and benefits, but the challenge can be met (Burton, 2009; Burton, Goodlad & Croft, 2006; Lane, 2005; Williamson & Scicchitano, 2013). This is due mainly to the fact that participation is a variable rather than an absolute. We can do more or less participation and what we do under the banner of participation can and does vary substantially. Given the wide range of potential benefits described above this makes the design of robust research difficult and helps explain why focused practice stories are more commonplace when it comes to researching participation.

The critical stance taken in this paper is not intended to diminish the importance of public participation in planning. Any planning regime that systematically excluded the public from

processes of plan making and of implementation in the form of development assessment would probably not be effective, nor would it be seen as a legitimate part of a democratic system of local or regional governance. But we know from experience that many participatory exercises do not meet their own ambitions: there is no obvious connection with 'better planning outcomes', whatever they may be and both organizers and participants feel dissatisfaction with the process. I have suggested that by answering three key questions about any participatory exercise there is a greater chance that these shortcomings will be overcome. This represents a more productive way forward than using as a generic yardstick a set of principles derived only from models of participatory democracy, in which implausible notions of mass participation are used. Rather than seeing Arnstein's ladder as a stairway to participatory heaven, we would do better to abandon the moral dimension to her conceptual framework and rely on more contingent criteria for judging the success of participatory episodes.

References

- Arblaster, A. (1987) *Democracy*, Milton Keynes, Open University Press
- Arnstein, Sherry (1969) A Ladder of Citizen Participation, *Journal of the American Institute of Planners*, vol 35, 216-224
- Bishop, J. & Hoggett, P. (1986) *Organizing around enthusiasms*, London, Comedia
- Buchanan, C. (1969) cited in S. Verney, *People and Cities*, Collins
- Burton, P. (2009) Conceptual, theoretical and practical issues in measuring the benefits of public participation, *Evaluation*, vol 15, no 3, 263-284
- Burton, P., Goodlad, R. & Croft, J. (2006) How would we know what works? Context and complexity in the evaluation of community involvement, *Evaluation*, vol 12, no 3, 294-312
- Collins, K. & Ison, R. (2009) Jumping off Arnstein's Ladder: Social Learning as a New Policy Paradigm for Climate Change Adaptation, *Environmental Policy and Governance*, vol 19, 358-373
- Damer, S. & Hague, C. (1971) Public Participation in Planning: a Review, *The Town Planning Review*, vol 42, no 3, 217-232
- Healey, P. (1997) *Collaborative Planning: Shaping Places in Fragmented Societies*, London: Macmillan.
- Innes, J. & Booher, D. (2004) Reframing Public Participation: Strategies for the 21st Century, *Planning Theory and Practice*, vol 5, no 4, 419-436
- International Association for Public Participation (IAP2) (no date) Foundations for Public Participation, available at <http://www.iap2.org.au/documents/item/83>, accessed 26 July 2013
- Keeble, L. (1961) Planning at the crossroads, *The Estates Gazette*
- Lane, M. (2005) Public Participation in Planning: an intellectual history, *Australian Geographer*, vol 36, no 3, 283-299
- MacCallum, D. (2009) *Discourse Dynamics in Participatory Planning: Opening the bureaucracy to strangers*, Farnham, Surrey: Ashgate
- Pennington, M. (2010) Democracy and the Deliberative Conceit, *Critical Review*, vol 22, no2-3, 159-184
- Peterson, M. (1984) *Thomas Jefferson: Writings*, Washington, DC, Library of America
- Planning Institute of Australia (2011) *Public Participation: National Position Statement*, available at: www.planning.org.au (accessed 20 July 2013)
- Sartor, F. (2011) *The Fog on the Hill: how NSW Labor lost its way*, Melbourne, Melbourne University Press
- Waltzer, M. (1970) *Obligations: Essays on Disobedience, War and Citizenship*, Cambridge, Mass., Harvard University Press
- Williamson, A. & Scicchitano, M. (2013) Dimensions of Public Meeting Participation: Evidence from Florida's Truth-in-Millage Act, *Urban Affairs Review*, DOI: 10.1177/1078087413480436

Community Engagement in Trinidad and Tobago: Theory or Practice. Case Study of Neighbourhood Upgrading Programme, Waterhole, Cocorite.

21

The University of the West Indies, St. Augustine

Abstract

Community Engagement is a buzz term used by academics, International development Organizations and planning and development practitioners. All RFPs, TORs and Technical proposals make mention of having community engagement in the development of the plans. Experience shows that it makes for a good technical proposal etc., but is it just rhetoric? Can community engagement be effectively achieved as outlined in the literature?

In recent times in Trinidad and Tobago the issue of community engagement made international headlines as there was protest action taken over the start of construction of a controversial section of a highway. Some were angered as they highlighted that their voices and concerns were not being heard and addressed.

What are the factors affecting effective community engagement in Trinidad and Tobago? To answer the question the case study of Waterhole was used as it is a microcosm of community engagement issues in Trinidad and Tobago.

This paper identifies theoretical and practical approaches to community engagement in land use planning and compares them with the practice in the case study Waterhole. On site interviews were done with the residents of the Waterhole Community as well as officials from the Land Settlement Agency in order to collect the data to answer the question posed.

It was found that, amongst others, ethnicity, power distances, violence, attitude of the state, limited budgets affect community engagement in Trinidad and Tobago. Suggestions for addressing these and other issues are highlighted.

Introduction

Trinidad and Tobago is a developing country and as such it undertakes many social and physical developmental projects in an effort to reach developed status. These projects are mainly funded by UNDP, IDB or other International donor agencies or organizations. These donor institutions usually have terms and conditions on how the projects are to be administered. One of these terms and conditions is community engagement. Despite stipulating the need for community engagement most people only become aware of the

plans or projects during the actual implementation phase of the project or those who are aware are not effectively engaged.

In 2010, a stop was made to the construction of a smelter plant in Cedros, Trinidad and Tobago after numerous protests showed that the residents of Cedros did not accept the plan that the government had made for the country and that they were not engaging the local residents.

In 2012, an IDB funded highway project made international headlines as a group called the Highway Re-route Movement protested on the site daily, one individual an environmentalist and activist carried out a hunger strike for 21 days in order that a review be undertaken, however, work still continues on the highway.

This shows that development if it is to be sustainable, successfully implemented and accepted must be people centred. Plans must not just be made for the people, the people must help to make and shape the plans. How to achieve this people centred approach is through effective community and stakeholder engagement.

Having examined the two scenarios above, there appears to be a disconnect between what is stipulated by development agencies through TOR's and policy guidelines. and how the projects are being implemented with respect to community engagement- its role and its importance. This leads to the question, is community engagement being effectively implemented or achieved in Trinidad and Tobago in order to achieve development? The question is important, as development can only occur through the implementation of plans. If plans and projects are rejected or stopped over protest action then development will be delayed or will not occur. If the government still goes ahead with a development plan that is not of the people the benefits of the plan will not be realized and development will not occur.

To answer the question, the Case Study of NUP of Waterhole Cocorite is used. The paper will highlight the challenges to community engagement in Trinidad and Tobago, and .factors affecting community engagement in Trinidad and Tobago. It also outlines the approach taken for the Waterhole project in order to compare it to best practice management approach for community engagement.

Methodology

On March 13th 2013, a survey in the form of a questionnaire was conducted in the Waterhole community. A total of 16 free response questions were asked to 10 randomly selected persons in the community. The sample included both men and women both young and old. The survey was to find out whether the community knows what squatter regularization is, what they see as the benefits of it, what community engagement means to them and whether or not they were satisfied with the approach to community engagement and how the engagement was done to facilitate the NUP in the Waterhole community.

Community Engagement

In order to answer the question fairly an understanding and definition of community engagement is necessary as community engagement means different things to different people and many people use the term loosely to describe very different approaches.

In order to investigate the question: “community engagement theory or practice?” This paper reviews the theory or approaches behind current engagement practices, examines international best practice and compares this with a local case study.

Community engagement is a term that is easily and repeatedly used in the area of sustainable development, but exactly what are the philosophies and ideologies that influences community engagement (how and who to engage)? Community engagement is a critical and indispensable component in any neighbourhood upgrading project. In a squatter settlement upgrading project unlike a conventional housing scheme or a sites and services project, the beneficiary population is already living on the site thus it is mandatory to involve the community in the preparation of the regularization and upgrading plans. (UNCHS/HABITAT 1985).

In the context of squatter regularization, community engagement can be defined as the voluntary and democratic involvement of beneficiaries in contributing to the execution of the project, in sharing the benefits derived from the project and in making decisions with respect to setting goals, formulating the project and preparing and implementing the plan. (UNCHS/HABITAT 1985).

Boles et al (2000) notes that community engagement is hardly understood though often used in developing countries without a serious attempt to critically analyse the different forms that engagement could take.

Community Engagement Theory and Practice

Collaborative Planning

The discipline of planning over time has developed approaches to engagement to land use planning and development. Theoretical approaches to engagement in planning have evolved to become known as Collaborative Planning in the UK and as Communicative Planning in the US. This type or method of planning has become extremely popular internationally in an effort to develop plans based on consensus.

Collaborative Planning evolved from a criticism of the technocratic model of planning where it was limited in application as it failed to recognize that planning was based on diverse values that could not be derived from science and that there was no optimal or correct plan that could be implemented without incorporating the interest of stakeholders (Guton et al. 2006). As such planning theory responded to the criticisms by acknowledging the role of goals and objectives identified through democratic political processes to set the framework in which plans were prepared. The challenge was to develop optimal means and structure to achieve citizen participation in the planning process (Guton et al. 2000).

Healey (2006) contends that all planning activity involves some interactive relation and some kind of governance process. She indicates that the metaphor “collaborative planning” was used and mis-used by politicians and policy makers in the UK from mid 1990’s onwards to describe their ambition for a new form of governance.

Collaborative Planning was first inspired by the perception of planning as an interactive process (Healey 2006). Planning is a governance activity occurring in a complex and dynamic institutional environment shaped by wider economic, social and environmental forces that structure but do not determine specific interactions. Healey (2006) defines governance as the process by which societies and social groups manage their collective affairs. Planning and policy initiatives are concerned with maintaining and enhancing the qualities of places and territories. Collaborative Planning was motivated by a moral commitment to social justice, especially as realized in the fine grain of life experiences in the context of culturally diverse ideas about local environments and ways of life (Healey, 2006)

Collaborative planning is described as a logical extension of alternative dispute resolution (Gunton and Day 2003). The approach is such that no one is excluded from the planning discourse and decisions are arrived at collaboratively.

In practice, the planner’s role in achieving the collaborative approach to planning is to use their technical knowledge to produce a strategy as “knowledge brokers and mediators” who play the role of critical friends. (Abu-Orf, 2005) For the planner to do this, the planning process should have inbuilt in it a two-way communication process in order that true collaboration can occur. Communication is an essential part of collaborative planning. It sounds simple but more often than not it is difficult to achieve for a multiplicity of reasons.

Bessette (2004) has identified how community engagement can be achieved using the communication model.

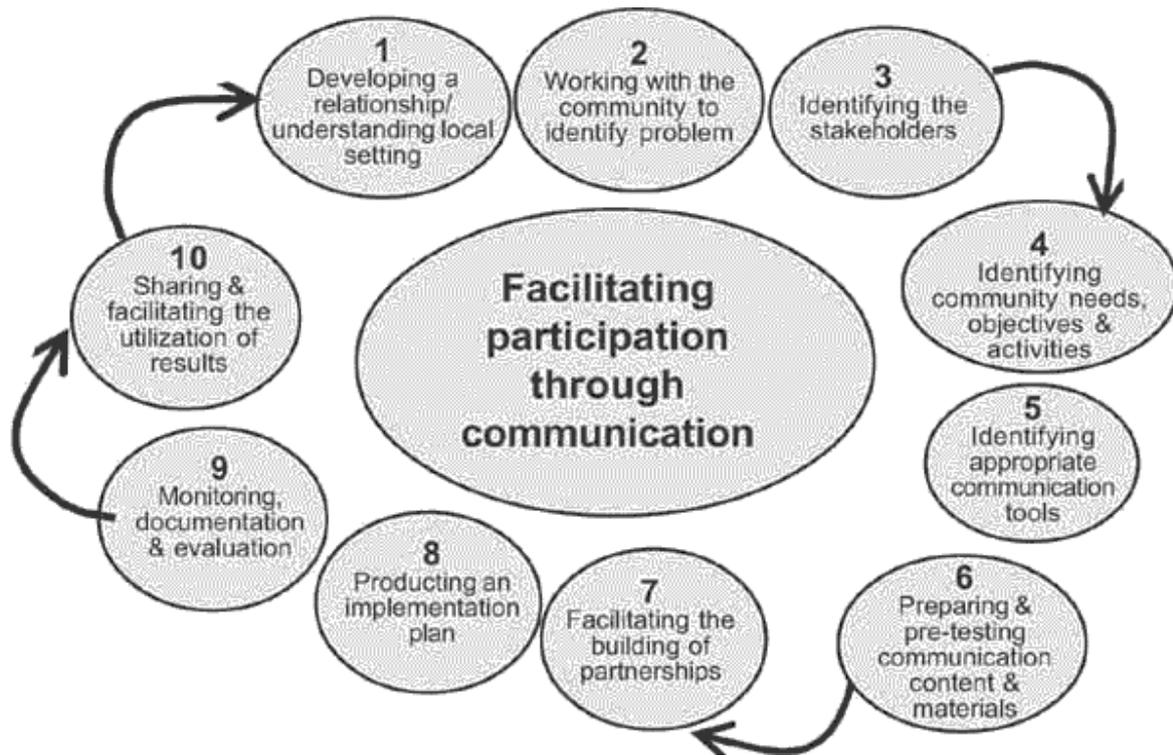


Figure 1 The PDC process (Bessette 2004)

He notes that the Participatory Development Communication Process (PDC) is about building mutual understanding and collaboration, facilitating a partnership and accompanying a development dynamic.

The ten (10) steps that make up the PDC model are:

1. Developing a relationship with the community
2. Working with the community to identify problems
3. Identify the stakeholders
4. Identify community needs, objectives and activities
5. Identify appropriate communication tools
6. Preparing and pretesting communication contents and materials
7. Facilitating the building of partnerships
8. Producing an implementation plan
9. Monitoring, documentation and evaluation
10. Sharing and facilitating the utilizations of results

Bessette (2004) notes that the PDC process is not sequential; some of the steps can be implemented in parallel or in a different order. The process is a continuous one not a linear one.

Collaborative Planning as a theory has become accepted. However advocates and critics are unanimous in their call for more research to evaluate the strengths and weaknesses of Collaborative Planning and to identify best practices guidelines for effective use of the collaborative model (Conley and Moote, 2000).

Planning For Real

A lot has been said and written about collaborative planning, about the need for inclusion and communication, but does not really show how community engagement can be attained and more often than not collaborative planning efforts because of the focus on communication can end up as talk-shops.

Gibson (1989) presents and offers a practical how-to of how collaborative planning can work.

This approach by John Gibson has been used since the 1970's as a means of giving local people a "voice" and professionals a clear idea of local people's needs in order to bring about an improvement to their own neighbourhood or community (MIT, 2013). The approach is an evolving style of community planning that does more than accept local knowledge but it integrates the search for local knowledge with community- building and capacity-building (Forester, 2005). It is based on an "Eyes down, hands on, rubbing shoulders, a lot less by mouth" approach (Forester, 2005). Planning for Real uses simple 3- dimensional models as a focus for people to put forward and prioritise ideas on how their area can be improved. It is a highly visible, hands-on community development and empowerment tool, which people of all abilities and backgrounds find easy and enjoyable to engage in. The problems and improvements are identified through pictorial "option" cards. This is to overcome the difficulties of verbal communicating by providing an "alternative currency" to words as a means of exchanging views and information (MIT, 2013). This highly participatory approach to planning appears to be especially effective in engaging citizens who avoid processes that require written comments and public presentations before large gatherings.

Planning For Real is designed to catch the eye and tempt the hand of everyone involved- residents, planners etc. together around a model, home-made by the residents themselves with planners joining in as time allows. This creates a working not just a talking relationship, based on a mutually rewarding experience and not just a statutory requirement for engagement. The Planning For Real tool comes in a kit and can be purchased. In recent years the Planning For Real Kit has become popular in some developing countries and has been used in the Caribbean (MIT, 2013). This approach is highly recommended for urban upgrading projects due to the underlying philosophies. However, there is danger in using this technique as in any other participation technique, where planners will adopt a top-down approach rather than using it to facilitate a community building process (MIT, 2013).

The PDC by Bessete and the Planning for Real by John Gibson represent the ideal models of community engagement as outlined earlier represent the approaches that should be

applied to the Neighbourhood Upgrading Project context. This is because of their effective practical approaches to community engagement in a logical and room for iteration.

These models show not how any government or consultants will engage the community, but rather it shows what steps must be done to say that real engagement has taken place. At times the engagement approach taken by the government or consultants can be skewed for their benefits. These accepted models remove this potential bias for example, in the PDC model by the fact that sharing and utilization of information is necessary in the engagement process.

The approach to community engagement carried out in the Waterhole NUP is compared against the accepted models presented earlier to make the case of community engagement: theory or practice?

Background

Trinidad and Tobago is a twin island republic nation located to the south in the Caribbean region. Just like many countries in the West Indies, it was under colonial legacy. It gained Independence in 1962 and since then had started on a quest of development through western ideologies such as urbanization and industrialization. This led to significant rural-urban migration as people were moving away from the plantations into the urban areas in search for other types of jobs. Today 73% of Trinidad and Tobago's population lives in urban areas, the second highest figure after the Bahamas. Data shows that there is a steady growth in urbanization as an annual change rate of 2.9% from 2005 to 2010. This increase in the urban population has significantly increased the demand for housing and urban services, thereby distorting the housing and land markets

As Trinidad and Tobago was a colony, the resident population was brought primarily to work as slaves or indentured servants on the plantation for production purposes only, the masses were therefore deprived of access to wealth and assets such as land. This is so as of today, 47% of households have inadequate or lacked documentation of the land they have built their houses on.

It is estimated that there are 328 squatter sites in Trinidad and Tobago and as time goes on as the issue of access to affordable housing and land as well as overall social and economic policies are not tackled new squatter sites will spring up adding to this figure.

Urban squatting in the country is significant and chronic. Urban squatting occurs along the Western coastal areas and along the foothills of the Northern Range. Urban squatting in Trinidad is characterized by physical, social, and economic problems. Problems include sites being located in vulnerable areas, poor road and drainage infrastructure, lack of solid waste and waste water disposal systems, poor and sub-standard housing quality, non-conformity to planning standards, high levels of crime and violence, juvenile delinquency, high levels of poverty and unemployment coupled with lack of skills and lack of access to basic social services.

Squatter Regularization in Trinidad and Tobago

The Land Settlement Agency (LSA) is the state agency under the Land Tenure Regularization Act of 1998 to legalize irregular squatters on public lands. The Act has identified those sites which are to be regularized.

The IDB through the LSA embarked on the Neighbourhood Upgrading Programme (NUP) where component 1 deals with Squatter Regularization.

Under the NUP the LSA seeks to improve the living conditions of beneficiaries in selected squatter sites by regularizing the layout, allocating lands for non-residential use to provide necessary services, upgrading the physical infrastructure and providing security of tenure.

Waterhole

Waterhole is an urban hillside squatter site located in the Greater Port of Spain region. The site is located north of the Western Main Road in close proximity to a major shopping mall, West Mall.

The Waterhole Community just like all the other Squatter sites is the visual and physical sign of state neglect. They represent the state's inability to provide access to land and housing to the low-income brackets. However, these communities also represent the pride of the residents who were able to upgrade the area through their own self-help approach in order to incrementally develop the area to what it is today; from the make shift drains to the wooden footpaths are all what was done by the community over time. There is a pride there that is so deep that it can affect the way the state intends to address the issue of urban squatters in Trinidad and Tobago. Many residents say "here was nothing before; it is I who developed here through toil and sweat." Mangin (1967) describes this as where "The squatters can boast of a major accomplishment where planners and governments have failed."

Community Engagement in Trinidad and Tobago Overview

Trinidad and Tobago has a strong civil society movement, including NGOs and academic institutions such as UWI.

Reports indicate that there is a view that using participatory processes is not yet seen as an integral part of planning and management, but as a separate add-on activity. It is noted that while some participatory approaches have taken place, the general consensus is that they have been ad hoc, small scale local initiatives that have not given an equitable role in decision-making to key stakeholders.

It is felt that there is need to institutionalize participatory approaches in policy and practice. As it stands the Town and Country Planning Act and the Squatter Regularization Act do not speak of community engagement. The Environmental Management Act speaks about a Social Impact Assessment which is very limited in scope.

In Trinidad and Tobago there is an extremely strong perception that while government agencies and key decision makers speak the language of participation, there is no true understanding of what participation means and its true potential value in management of

livelihoods (CANARI, 2000) . This has manifested itself in the low levels of commitment to participatory approaches and decision-making power and authority (CANARI, 2000) .

Participation for material incentives is an increasing common model in the country with government and externally funded projects. In some cases community organizations and members are increasingly unwilling to become involved in engagement initiatives unless there are direct financial benefits. There is little focus by both government and civil society to adopt the wider and more complex benefits of community engagement (CANARI, 2000) .

Approach to community Engagement NUP Waterhole

The following information was derived from interviews and questionnaires conducted with the people in the community. In November 2011 the Neighbourhood Upgrading Project Waterhole, Cocorite was started. The community engagement for the project primarily was:

- A community presentation at the end of each phase. The consultants would present the final output of each phase to the community.
- The hiring of a community liaison officer whose role was reduced to escorting the consultants throughout the site, which was necessary due to the increased levels of crime and violence in the Trinidad and Tobago society and to prevent any negative actions related to how the community typically views outsiders.

The NUP project was broken down into three phases:

- Land Use Concept
- Land Use Plan
- Sub-division Plan

The Community of Cocorite, Waterhole did not know officially that the NUP had started, at the Land Use Concept stage. The community was only aware of the project after the LSA had already accepted the Land Use Concept Plan and the Consultants had to present the concept plan to the community on March 28 2012. Actually, work had already started on the next phase of the project, all without real community input, as there was a lag between acceptance of the concept plan and the community presentation.

Community Presentation

The LSA only planned for 3 community meetings and this highlights the low level of importance placed on community engagement as viewed by state agencies. This approach, in theory, is ineffective. In practice, the community engagement was not effective as the project came to a stop after the first community presentation.

The execution of squatter regularization projects should be examined with an aim of trying to spread the limited resources evenly. This can be done by developing cost-effective solutions for each component of the process including data capture and engagement, as practice shows that without proper engagement the project will not be accepted by the community and may therefore fail.

The presentation took the form of a power point presentation with maps, and text. The officials and consultants were seated at a head table emphasizing the power divide. Neither leaflets nor print-outs were made for the community to review before or during the presentation. The presentation was not interactive, the residents indicated, that interactive secessions are more effective. Questions had to be asked at the end of the presentation as to not distract the presenter. Residents indicated that during the presentation, they wanted to ask questions but having to wait until the end they forgot or were not interested anymore in raising them. A controlled interactive delivery setting would have been preferred by the community.

The community expressed concern, anger and resentment that such a detailed presentation was made to them, without any input from them. Questions were asked, who told you to draw that line there, who told you what roads we need, who did you consult in the community? The community evidently wanted to be involved in foundational aspects of the plan for example, the land use designations and the determination of relocation as was evidenced in the infield surveys.

Residents indicated that racial derogatory remarks were made to the presenter based on ethnicity. The Waterhole community is predominantly of African descent whilst the presenter is of East Indian descent, expressions like “why you don’t go back to Caroni” (predominantly Indian community) and “we do not want your plan” were hurled at the presenter. In Trinidad and Tobago the ethnicity factor stars in all aspects of the society and as it stands sensitivity to ethnicity issues in development and planning have to be considered in order to inform effective community engagement practices when the issue of ethnicity can be problematic.

The community indicated that the day of the community presentation was poorly scheduled as the Waterhole community had already planned their community football tournament in the same venue and on the same day as the presentation. Some residents indicated that the LSA had no respect for their community spirit and that the LSA was wasting their time with the presentation. This fuelled aggression throughout the community presentation. The LSA was threatened, and then were asked to leave. Some residents indicated they do not agree with the threats, but the football was planned first. A good approach to community engagement should have consulted the community about a proposed date and then it would have been found that the date by the LSA should have been shifted.

At the presentation some critical questions were asked but the community found that they were not answered clearly, for example, the issue of relocation, the issue of compensation, and the issue of not being able as a resident to contribute financially to the regularization exercise. The poor response to these questions made the residents uninterested in the exercise stating that it is just a usual waste of tax payers’ money. Some indicated that when the LSA is willing to answer those questions they could come back to the community.

The Waterhole community appears to be suffering from “engagement” fatigue as many plans are presented with no implementation. The community is an ideal representation of neglect. Some residents indicated that they listened intently to the presentation despite what was happening and were actually looking forward to the LSA coming back in 2 weeks’ time to discuss and decide on conclusions with the community. But the residents say this never happened and now they are tired of “talk-shops” and false promises. Residents say they will be willing to participate but presentations alone cannot suffice as engagement. The residents indicate that after the big presentations, meetings must be held to capture the community’s ideas and to incorporate them in the final plan.

Community Liaison Officer

It was accepted by the LSA that the need for a Community Liaison Officer is critical; however the definition of the role was not clear from the onset and therefore the benefits of having community liaising as an engagement tool was not realized.

The selection of the community liaison officer proved to be an unpopular one with the community. He was selected because he was known to the consultants. From the interviews it was gleaned, that having understood the need for a community liaison officer, at the initial stage of the project, the community should have been aware of the project in order that the community themselves could select a person or a group of persons that will be best suited with the necessary skills and knowledge to represent the community. This would lead to them being accepted and having consensus with the residents in the community.

The community liaison officer was deemed to be too political in order to be able to speak objectively for the community as a whole. Residents, who indicated they were opposed to him, said they will not participate in the process and do not want to be part of the project.

It was revealed that the Local Government Councillor should have had a major role on the project; he should be the one taking all the concerns and engaging the various stakeholders on behalf of the community. However, some residents indicated that the councillor does not do his job. A Guardian Newspaper report highlights that the councillor along with the Minister of Social Development were touring the community and they were pelted with rolls of toilet paper months after the community presentation. Incidents like these show that community representation is a very sensitive one and as such the person or persons must be able to be effective at it.

The heckling by the community towards community officers, officials illustrate the extent to which the community will go to express their concern, non-acceptance and disapproval of a project or programme. How they respond to this power difference is in an aggressive and disrespectful way, which will act as a deterrent to other agencies, other interested community liaison officers to be eager to effectively engage as they fear they will be attacked in a similar manner.

The comparison of the case study with the best practice selected will lead to a conclusion about how to correct the local process.

Analysis

The PDC model identifies ten (10) steps necessary for successful engagement, however the NUP approach was limited as it only focused on presenting the final output. In this respect the approach can be defined as consultative as opposed to engaging. Consultation is defined as when one decides on what they want to achieve and ask others what they think of it, whether the persons respond or not is insignificant as those being consulted have no real say in the final decision.

Urban squatter sites in Trinidad and Tobago are known to be socially volatile, hence the need for security in order to ensure safety whilst carrying out community work in such areas. There seems to be a view that the community liaison officer role is to be the security. It is however important to note, that the roles of security officer and community liaison officer should not be mixed up. These are separate distinct roles, security has a purpose and community liaising has its purpose. At times one person can fill the roles, but both roles must be fulfilled, not one at the expense of the other. Acceptance of the person or persons to fulfill these roles by the community is paramount to the success of an overall engagement strategy and hence for the success of the NUP.

The approach to engagement by the LSA assumed that the consultants along with the LSA already knew what the community wanted, but this was far from the case. Institutionally in Trinidad and Tobago, the culture towards development is a top-down approach where the government or consultants selected by the government select a development problem, in this case squatter sites, identify potential problems, make decisions, present decisions and implement all without community engagement. This top-down approach is one where the government thinks that it is doing the squatters a favour and therefore the community is seen as a mere beneficiary and not central to the decision making process. The concept that beggars cannot be choosers come into play in the top-down approach to development. This top-down approach cannot work in urban squatter communities as it intensifies the power divide and its consequences between the community and the technocrats deciding on and implementing the plan.

For successful development, communities like Waterhole must be involved in identifying their own development problems, in seeking solutions and making decisions about how to implement them.

From the data collection exercise, it was revealed that the community needs a more participative approach to NUP. As such Planning For Real should be used. If planning for Real is utilised, the community could be certain that having invested time for such an approach the government is serious about the project. Residents do not feel to be engaged as they deem the government as not serious about squatter regularization. Planning for Real serves as a psychological incentive to participate where the community and planners work hand in hand with each other.

The name Planning For Real alone speaks volumes, as the community sees planning as a waste of time, they do not understand the process. The community indicated most times the planning exercise end up as a written report with no implementation and more often than not, the community is excluded from the process. Planning for Real would bring awareness

to the community about the different factors planners have to consider in developing the best plans for a community.

With Planning For Real, where residents are actually involved in shaping their community, the community's attitude towards planning will change. In addition it will create a neutral environment where sharing of knowledge would occur as well as easing tensions. With this approach, the issues of race and power differences will take a back seat as the community will be able to determine for themselves that progress is being made with true community input. The community will have no time for exaggerating the differences; focus will be placed on building community models and shaping their own space. This high degree of empowerment will be greater than causing conflict that is synonymous with consultative approaches.

With respect to the community presentation approach adopted by the LSA, according to Tony Gibson, having community presentation is very limiting. This is so because he states that presentations tend to privilege the more highly educated and professionally trained members of the community while marginalizing others. This is indeed true, as residents indicated that they were confused when the maps and "big words" were presented on the slides. Planning For Real is ideal and effective in engaging citizens who avoid processes that require written communication and public presentations before large gatherings.

As was identified from the survey, that the liaison officer was deemed too political to represent the community, it is paramount that engagement activities and its objectives do not become politicized or used for political party purposes. This is a general trend with respect to community engagement in Trinidad and Tobago.

The community engagement approach by the LSA failed to develop a harmonious relationship with the community, an antagonistic relationship between the community and the LSA developed after the community presentations. the approach failed to have mechanisms in place where residents can come to the consultants with concerns as well as to help them identify their own problems. There was a need to ascertain what the community sees as critical in the NUP, was it the deed of lease, was it contracts to upgrade the community, was it the need to be involved in every step of the way?

The approach further failed to utilise other stakeholders necessary for the success of such a project. the LSA is the only agency responsible for squatter regularization in Trinidad and Tobago. However squatter regularization is complex and requires the expertise that one agency alone can realistically have. The LSA does not have the administrative, financial and technical resources to truly operate like a specialised agency, therefore, the need to involve other stakeholders for support and to capitalize on their different strengths. For e.g. the Citizen Security Programme an organization whose objective is to reduce crime and violence operate in the Waterhole community but it was not involved in the NUP.

The approach failed to pretest their engagement approach. No preliminary community engagement meetings formal or formal were held at the start of the project to gauge how the community reacts to project in order to develop the best engagement plan based on how the first meetings went. If this was done the LSA would have realised that public presentations after decisions have been made would not have sufficed. these kick- off meetings could be used to "test the waters" and offer the opportunity to see what the community wants explain, how to explain it, identify the best ways to incorporate community ideas and inputs into the

plan , all in order that it can be analysed and presented back to them. if you have a pre-planned approach, by testing it, one will be able to see how the community responds and then continue with the approach or make necessary changes to improve the engagement process.

Finally, community engagement can cease to be meaningful if it is undertaken purely for the sake of having to be seen to engage. This is important to note as there are consequences to flawed participation as the case study highlights. Community engagement must be well thought out and implemented properly, success is not measured in theory but in practice. If the practice is of community engagement is not effective it can lead to community ill-will, aggression, violence and stop to development projects at the expense of those who need development to happen.

Conclusion

Community engagement in Trinidad and Tobago is not in line with the desired practice. The approach needs to be more collaborative as opposed to consultative in approach. It is all ideal to have community engagement as a foundational principle but if the community itself is not the centre of the development, that is, if the models presented are not effectively utilized in Trinidad and Tobago, it is just pure rhetoric.

References

Abu-Orf, H. (2007). Collaborative Planning in Practice: The Nicosia Master Plan. Planning Practice and Research Volume 20, Issue 1, 2005.

Bessette, G. (2004). Involving the Community A Guide to Development Communication. International Development Research Centre.

Forrester, J. (2008). Interface: Practice Challenging Theory in Community Planning. Planning Theory and Practice, Vol. 9 No. 1, 99-128, March 2008.

Gibson, T. (1989). The Doer's Guide to Planning for Real. Neighbourhood Initiatives Foundation.

Healey, Patsy (2006). Collaborative Planning Shaping Places In Fragmented Society. London, McMillan.

Mangin,W. (1967). Squatter Settlements. Scientific American, Vol 217 No. 4

MIT(2013). Interactive community planning: planning for real.
<http://web.mit.edu/urbanupgrading/upgrading/issues-tools/tools/Planning-for-Real.html>

Moote, Maragaret A. Conley, K.Firehock and F.Dules. (2000). Assessing Research Needs. A Summary of A workshop on Community-based Collaboratives. Tuscon Udall Centre for the Studies of Public Policy, University of Arizona

Thomas I. Gunton, Thomas Peter and J.C.Day (2006/2007).Evaluating collaborative planning: a case study of a land and resource management planning process.Environmental journal volume 34(3)

UNCHS/HABITAT (1985). Community Participation in the Execution of Squatter Settlements Upgrading Project- Training Module.

Bottom-up Urban Development in Action

Marija CVETINOVIC, EPFL, Switzerland
Ivan KUCINA, AF-BU, Serbia
Jean-Claude BOLAY, EPFL, Switzerland

1. Introduction

The conceptual framework explained herein examines the blurred and askew structure of neglected urban neighbourhoods in post-socialist cities. This requires innovative, small-scale, dynamic proposals in order to overcome the rigid administrative procedure of urban development and to transform the negative side effects of imitating and lagging behind the conventional urbanisation model and those of the accelerating globalisation into a development impetus suited to these environments. In this highly competitive international economic and political arena, transitional countries experience severe consequences due to the paucity of practical experience within this new context of a market economy and decentralised political and administrative powers, a lack of resources, the scarcity of general international investment and scant interest in seeing dramatic shifts in all aspects of social organisation and urban transformations. The alternative strategy could be put forth through bottom-up spatial production of all the urban actors and stakeholders involved as a common denominator of a non-intrusive platform for the active representation, assessment and management of urban conflicts as a range of iterative “inter-states”.

Belgrade, with its one and a half million inhabitants, is the capital of Serbia. It is the only large European city situated on the confluence of two great rivers, the Sava and the Danube, waterways that throughout history marked a border between two of the most powerful European empires - Ottoman and Habsburg. Its picturesque position and historical mixture endowed Belgrade with vast spatial potential for creative urban development. In fact, as the former capital of the socialist state, it underwent remarkable economic, social and cultural damage during the nineties, a decade of wars and national turmoil in the former Yugoslavia and which had insurmountable consequences as regards uncontrolled urban growth. The expansion of bottom-up informal building that followed the explosion of a grey economy has taken over all its free spaces as well as the existing buildings both in the centre and on the periphery of the city. Conversely infrastructure inherited from the socialist period, but with its low institutional capacity, with the Belgrade has continued to be the centre of economic growth with a variety of services' expansion, building innovations and urban conflicts.

Beside the effects of the war economy, the urban growth of the Serbian capital has been determined by dramatic social, economic and political deterioration, as has been the case with the other post-socialist transitional cities in Central and Eastern Europe. The abrupt shift from a communist regime to that of a neo-liberal economy hindered urban development in Serbia and led to political instability, convergent socio-economic forces and inconsistent planning systems. Inherited from the communist era, top-down urban planning procedures and strategies, were rendered inefficient in addressing urban conflicts at all spatial levels. In addition, the failure to successfully replicate more advanced models of western neo-liberal economies made it clear that a fragmented, small-scale approach to spatial and social conflict could achieve more long-term consistent and far-reaching results. For this reason, the focus of the study presented here evolves from individual informal development to citizen participatory practices, which are both an essential prerequisite of social integration and an inter-medium for addressing urban issues in a broader context.

A case study of Savamala, a devastated urban quarter of Belgrade, represents the research and action that has been identified as an exploratory analysis of the interactional process involving the various urban actors in a socially and spatially constrained urban environment.

It is taken as a testing ground for the implementation of an innovative tool for “action and learning by doing”(Lydon 2012) in the urban planning of transitional post -socialist cities.

The first part of this paper provides an overview of spatial and historical circumstances and their transposition which designate Savamala neighbourhood as a suitable environment for instigating efficient bottom-up urban transformation. Then, we will present how an experimental learning tool for bottom-up urbanism is adjusted and applied to the context of Savamala. Its alternative urban development model is based on the combination of a participatory approach within the principles of tactical urbanism through the transposition of obvious urban conflicts and clandestine social potential and spatial capacities in urban development opportunities. Participatory activities are rounded up in an urban transformation programme named Savamala Civic District and in the Urban Incubator project activities. Finally, the aim of this paper is to indicate a chance for urban change through an iterative process of small-scale citizen interventions. The resulting urban state of Savamala will eventually expose economic, political, cultural and spatial transformations elicited therefrom and explicate the initial step in building an urban development model appropriate for urban environments in post-socialist cities.

2. Savamala neighbourhood

2.1 Location

Savamala is a neighbourhood in Belgrade situated on the southern bank of the Sava River and belongs to the central city zone known as the Savski Amphitheatre. Its name translated into English means “Sava neighbourhood”, and intrinsically, its name is derived from the Turkish word for neighbourhood “mahala”, combined with the name of the river whose bank it is situated on, which testifies the resolution of city authorities about 100 years ago to spread the urban structures to the river in order to set forward its urban development.

The neighbourhood of Savamala is among the most important landmarks of the city of Belgrade (apart from The Kalemegdan Fortress, Knez Mihailova Street and Kosancicev Venac urban neighbourhood) and it justifies such a role as it is a unique area in Belgrade with such a plausible collision between traditional and modern and past and present, rich in tradition, history and heritage. But world wars, authoritarian rule and the current economic crisis have left their marks.

Savamala today is stuck in a long-term process of decay. It is also a transit area that permits heavy traffic (trucks, trams, cars) to bypass the city centre; this aggravates its already alarming traffic jam. Therefore, this neighbourhood, endowed with an extraordinary spatial and economic potential and rich urban history, is now a traffic bottleneck with intense pollution and urban noise whose obvious spatial conflicts are neglected by both the authorities and professionals (“Urban Incubator Belgrade” 2013). Moreover, Savamala is economically underdeveloped and socially disadvantaged, and has a reputation as a home to outcasts, prostitution and criminality, while its citizens are continuously fighting for better living standards, only one kilometre away of the city centre that does not lag behind other European metropolises in terms of its architecture and urban design quality.

2.2 History

Savamala is the first Belgrade city quarter to be erected in the 18th century for the Christian population outside the Kalemegdan fortress during the reign of Austro-Hungarian Empire. Urbanisation in the manner of a European city started after 1833, when Serbian authorities gained control over Belgrade and decided to make the Savamala neighbourhood an elite commercial and cultural urban quarter. Therefore, Savamala exhibits a rich heritage of valuable historical buildings from the 19th and early 20th centuries and a few relics from the Ottoman period.

Over the centuries, the river Sava was the border between the Hapsburgs and the Ottomans. As they fought for the domination over the city, it consequently suffered continual instability, shifting from demolition to rebuilding. During the short peaceful periods, Savamala grew up as a trading centre adjacent to the river ferry border-crossing. During the late 19th and early 20th century, following the pace of modernisation of the independent Serbian Kingdom, new national cultural institutions were established next to the trading services. For a short time, Savamala became the site for massive building projects, considered to be of the greatest cultural and historical significance. However, in the course of the destruction during World War I and the subsequent establishment of the Yugoslav Kingdom that shifted the border far from the riverbanks and focused the development of the city centre in uptown Belgrade, Savamala lost its attractiveness and fell largely into a state of decay. The streets were not maintained, inconspicuous warehouses were stuffed into empty plots, buildings were partly abandoned and occupied by the urban poor, and the area repeatedly suffered major floods.

Beside the damages from bombardments during World War II which led to the intense deterioration of the area, after the war, Savamala was disregarded as the legacy of the capitalist era, and its main transversal street Karadjordjeva – once among the most beautiful city avenues – was turned into a crowded, noisy and polluted transit roadway surrounded by poor warehouses and manufactories that replaced the bombed palaces. Furthermore, Savamala also hosted the enlargement of the state major traffic infrastructure, including the nearby main train station, the bus terminal, the river terminal and two of the city's main bridges connecting the city centre to New Belgrade, newly constructed capital of a socialist Yugoslavia that projected its high collective ideals onto urban development by appropriating the concept of modernist urban development.

2.3 Contemporary

After the major political shift in the year 2000, post-socialist transition has started opening up the possibility for private capital to enter the privatisation process and to dispose of property. In such an economic constellation, Savamala has a potential to become an attractive urban area for investments. The situation has also been recognised by a combination of corrupted public authorities and powerful private developers, who have been aiming to maximize their profit by usurping public spaces and built infrastructure. Consequently, very little room would be left for any other form of urban development (such as socially and culturally sustainable development would be) apart from seeing it as an asset for gaining political influence and as an abundant source of profit.

Despite the ownership change, Savamala has been saved from this newest development trend mostly because of its long-term decay that is making it a far too complicated case for the limited investments with short-term turnovers that are dominating in Serbia. In addition, the recent European debt crisis that has been largely created by speculation in the real estate business is postponing any financial injection to the construction industry in Belgrade until the distant future.

In the meantime, taking advantage of this long gap in development, a number of small-scale public initiatives, as well as creative services, have found their place in Savamala, infusing sparks of new life into the area. In the absence of an overall urban development strategy, independent cultural entrepreneurs supported by the local municipality Savski Venac have started to transform unused warehouses and craft shops into spaces that are open for public participation and social production. What today might seem not more than a sum of ephemeral activities has a potential to become a driving force for a possible urban future of Savamala. For example, KC Grad – an independent cultural centre, Magacin – an NGO culture cluster, Mikser House – a creative association, Nova Iskra – a young designers incubator, and “Urban Incubator” – a Goethe Institute initiative, all of which have finally introduced the opportunity for an alternative strategic gateway to influence the future development of this devastated but promising neighbourhood (“Mikser Festival” 2012).

3. Strategic Gateway

The alternative model for urban development of Savamala is based on the conceptual idea of extending the urban life of Belgrade down to its riverbanks by infusing small-scale cultural practices and crowdsourcing activities, creative industries, urban manufactories, and cooperative economies. This conglomerate of individual initiatives strives to physically transform the Savamala neighbourhood and to influence the long-term process of urban transformations that are based on social interest rather than on real estate speculations. In the long-run it will change its urban image in these ways: converting abandoned warehouses into socially productive facilities, activating riverfront usage, encouraging local community participation, attracting new visitors to the neighbourhood (professionals and general public, both local and global) and finally revalorizing and repositioning the Savamala neighbourhood within the physical and functional scheme of the whole city of Belgrade.

<i>Social potentials and spatial capacities</i>			
<i>Economic</i>	<i>Political</i>	<i>Cultural</i>	<i>Spatial</i>
<ul style="list-style-type: none"> • Trade and artisanal area • Location: close to city centre 	Participative and self-organisational initiatives (KC Grad, Mikser, etc.)	<ul style="list-style-type: none"> • Heritage • Tradition: crafts 	<ul style="list-style-type: none"> • Location: river bank close to the confluence Sava-Danube • Spatial resources: abandoned buildings and empty plots

Figure 1: Categories of social potentials and spatial capacities in Savamala

This model of urban development combines such an approach of tactical urbanism with participatory actions in order to set forth urban transformations. According to Mike Lydon's paradigm of tactical urbanism, pop up projects operate with local ideas and respond to local challenges in such a manner that they bring positive changes and develop social capital and organisational capacity through low-risk, iterative approach (Lydon 2012). In terms of an urban development model, the process of urban change for Savamala is to be built through 4 phases:

1. Identify urban conflicts and brainstorm capacities of Savamala neighbourhood – explanation of an urban context, a deliberate, iterative approach to instigating change
2. Congregate ideas and set up a common vision for Savamala's urban transformation – focus on local ideas as a response to local challenges
3. Try to resolve urban conflicts by instant actions – agility and value of short-term projects based on the development of social capital and the building of organisational capacity
4. Build low-risk scenarios and introduce a non-intrusive, bottom-up strategy of urban development for Savamala neighbourhood

3.1 Urban Conflicts, Social Potentials and Spatial Capacities

In order to identify and elaborate how participatory activities influence urban development in Savamala, it is essential to transpose the current state of its urban environment into factors which could denote such positive impetus. Namely, contemporary urban development aims to correlate all of the elements of a modern urban environment (urban actors, social practices, space, built environment, infrastructures) which are influenced by economic, political and cultural factors in order to improve living conditions and facilitate positive social interactions. However, the interaction and interconnections among these key agents in an urban environment not only incite and develop social potentials and spatial capacities, but also evidence production and the challenge of urban conflict.

<i>Urban conflicts</i>				
<i>Economic</i>	<i>Political</i>	<i>Cultural</i>	<i>Spatial</i>	<i>Technical</i>
<ul style="list-style-type: none"> • Attractive location for private investments • Lack of systematic investments in constructing industry (debt crisis) • Poor population in the area • Criminal activities present in the area 	<ul style="list-style-type: none"> • Lack of regulatory framework • Powerful economic actors with strong political influence 	<ul style="list-style-type: none"> • Marginalised groups living in the area • Disintegration of heritage (fragmented approach to renovation and revitalisation projects) 	<ul style="list-style-type: none"> • Transition area (heavy transport) • Abandoned and ruined buildings and empty plots • Deteriorating industrial area • Noise and pollution 	<ul style="list-style-type: none"> • Lack of data about the state of physical structures • Lack of data on social structure in the neighbourhood

Figure 2: Urban conflicts in Savamala categorized according to defined factors

Benefitting from these social potentials and spatial capacities (Figure 1), as well as addressing urban conflicts (Figure 2), involve the continuous reviewing of how the collision among these positive and negative influences actually produces a variety of contextual resources. In this case, the conceived locational, spatial and cultural resources of Savamala are those that aspire to generate a set of actions for building a model of urban development that achieves common viewpoints, goals and priorities among all urban actors and stakeholders (Figure 3). Knowing that this urban development model renders qualitative urban change, it is crucial to determine the beginning and end state of factors that indicate such a change, i.e. economic, political, cultural and spatial characteristics re-imagined in terms of urban conflicts, social potentials and spatial capacities.

<i>Contextual resources</i>		
<i>Locational</i>	<i>Spatial</i>	<i>Cultural</i>
<ul style="list-style-type: none"> • Accessible, • Close to city centre • Close to the river 	<ul style="list-style-type: none"> • Abandoned buildings and empty plots currently without interest from powerful economic actors because of financial crisis 	<ul style="list-style-type: none"> • Rich in tradition and cultural heritage • Aroused interest for this neighbourhood from cultural and artistic groups, individuals and organisations

Figure 3: Contextual resources in Savamala indentified after the analysis of urban conflicts, social potentials and spatial capacities

3.2 Urban Transformation Programme: Savamala Civic District

Savamala Civic District was originally envisioned as a set of participatory activities supported by the Mikser Festival, common denominator of which was building a platform for all urban actors and stakeholders to engage in changing their immediate surroundings, even though neither the wide variety of these actors, nor exact steps end state in this process, were to a great extent clarified beforehand. Therefore, the priority goal of the project was to create a sort of civic district as a long-term participatory realm for taking the most of a range of opportunities for non-institutionalised, flexible and dynamic urban transformation programme through various levels of sharing:

- *Knowledge-sharing* (Hess and Ostrom 2007) – the educational aspect of an urban transformation process

1. Capacity-building – regenerate community and strengthen the exchange of creative ideas where everybody needs to have an understanding of the personal and public relevance of urban transformation and then make their contributions irrespective of social status. Urban transformation offers an incentive to invert any negative feelings into collaboration in order to generate new standards of living and working.

2. Knowledge-building - continual production of new knowledge through knowledge exchange. Interaction between devastated places and advanced practical and academic professional knowledge plants sparks of a new life in people's minds that could be injected into the paralysed urban body, suggesting the way for the new approach to urban development

- *Experience-sharing* – an interactive system for continuous social exchanges

3. Collaboration-building - in an innovative and inspiring manner, encourage a wide variety of urban actors to join the network and contribute their talents, and to present and incorporate their social and cultural particularities to the emphatic culture of exchange

4. Reality-building - a serial of civic activities should work as a booster for social exchange in order to enlarge production of urban energy needed for running community services and cultural practices in the course of future development.

- *Vision-sharing* (Meroni 2007) – creative participation to instigate qualitative urban change

5. Facility-building - inauguration of diverse minuscule public spaces (urban bundles) for group gathering, meetings, debates and collaborative work. These small public spaces represent a kind of hot spot, buzzing with energy, exchange, invention, and dedication to a better life,

6. Vision-building – a series of common projects develop a vision of urban transformation by adding up sequences and unfolding the experiences of the community that is using and building it - plot by plot, building by building, and street by street. Collaboration among different actors produces a diversity of projects and increases opportunities for a variety of proposals.

In order to test this program an international group of experts who work on innovative models for bottom-up synergies among the social, cultural, infrastructural, ecological and economical aspects of an urban development gathered in Savamala during the Mikser Festival in 2012. The event included a series of meetings, debates, collaborative works and public space installations taking place in Savamala neighbourhood. The intention was to explore how the urban transformation programme could be triggered through cultural activities and creative interventions. In order to meet this goal seven parallel workshops addressed the status and development of Savamala from different perspectives, such as:

- Unheard Stories of Savamala (SIMKA and Ana Ulfstrand, Stockholm)

This artistic workshop promoted an ethnological approach towards research that could interpret the urban devastation – from collected documentation, interviews, and observations.

- Urban Body (Alexander Vollebregt, Rotterdam)

While struggling to find a true resilience and prosperity in the contemporary condition of Savamala, participants have to learn to use the full potential of their minds and bodies to develop an enhanced urban comprehension.

- 5 Obstructions for Urbanism (Todd Rouhe and Lars Fischer, Common Room, New York)

Several onsite installations have been built according to creative methodology articulated by the Five Obstructions: 1. Appropriate the everyday: elevate the ordinary 2. Never finish: making and using architecture are interconnected 3. Share space: negotiate and overlap. 4. Include differences: redefine boundaries and be inclusive. 5. Don't be new: don't be new for the sake of the new.

- Butong Installation (Lars Høglund, Stockholm and Benjamin Levy, Paris)

Installation made of Butong, material that was created in 2009, served as a convertible eco barrier in order to protect the public space from the aggressions of heavy traffic.

- Urban Bundle (James Stodgel, Santa Fe)

A temporary public space installation that provides an initial condition for citizen gathering, meeting, debating, and collaborating in the process of creating and maintaining their social and urban environment.

- A Sense of Place (Ljubo Georgiev, Maja Popovic, Failed Architecture, Amsterdam)

The workshop took place in one of the courtyards of Karadjordjeva Street transforming it from a place of conflict into a place where neighbours gathered together. The habits of local people were learned in order to find out how to reinforce their sense of belonging to the place and to upgrade the space they are forced to share.

- City COOP Web Platform (Ana Lalic, Vancouver)

Students were designing a wireframe storyboard that will serve as a draft plan for creating the website platform that will build a social network of citizens, experts, developers and institutions to exchange ideas and opinions related to the urban transformation of Savamala.

3.3 Project Urban Incubator

Generating Savamala Civic District from the bottom up becomes apparently feasible through the enabling of direct interaction between urban space and civic life. Hence, the revitalisation project Urban Incubator, supported by the Goethe Institute Belgrade, aims at visualising the urban future of Savamala as a network of places where all urban actors and stakeholders can meet to share their respective cultural merits and urban experiences. All the actions inside this project rely on communication among individuals, self-organised associations, public services and private enterprises as equal participants in the societal realm which will demonstrate its influence by performing spatial changes as social exchange and eventually boost urban transformation.



Figure 4: Spatial distribution of Urban Incubator activities in Savamala neighbourhood

Urban Incubator reflects the urban future of Savamala through ten site-specific parallel project activities (Figure 4). These activities are divided into three groups depending on what they address: the developing infrastructure for social change, systematic collaboration within the network of civic engagement and pop-up events and instant actions for the reconstruction of everyday life:

3.3.1 Building ICT infrastructure for social exchange

Based on the fact that new technologies and mass-media are an omnipresent reality-builder and an essential social glue in a modern networked society that extends spatial essence of urbanity via technical resources (Amin 2006), the idea was to use online social media and web 2.0 technologies as informational, communicational and educational tools to first assemble and then spread around perceptions of space, time, lifestyles and a sense of

community among urban actors and stakeholders of Savamala and further expose them to the criticisms and influences of the general public. In this way, intellectual and social networks are created, that stretch from obvious spatial proximity, constitute a synergy on the basis of knowledge and information and represent the core stimulus of applied creativity, all of which are essential structural elements of qualitative urban change.

Nextsavamala – Crowdsourcing a City Vision

This activity is based on its successful application in Hamburg, where these instruments have been developed and tested. It represents a web-based public forum and workshops for collecting and filtering citizens' visions and discussing, developing and pitching ideas that can be later on implemented in actual planning processes for Savamala neighbourhood.

It incorporates two manners of networking: online (not only for urban actors and stakeholders from Savamala, but for all interested in urban planning and development topics) ("Nextsavamala" 2013) and offline communication (workshops, conversations, and a post-box for residents of Savamala). So, the online platform and social network serve for recognising urban conflicts (input data) as well as gathering and discussing ideas for urban transformation and implementation (projects, scenarios).

In its essence, it is a sort of citizens' agenda which contains the practical answers of how citizens envisage the future of Savamala. Moreover, through a careful decoding and mapping process this agenda could also provide us also with possible manuals of how to organise participation if there is a lack of adequate structures and traditions, as it is the case in post-socialist countries, where there is no practical experience of public participation, but a recent trend of promoting involvement in the public realm.

3.3.2 Network of civic engagement

It encompasses systematic collaboration for building and disseminating knowledge about the urban situation, providing data, gathering information according to these data and informing the public on current urban conflicts, promoting urban development, and setting up modules for active participation in articulating urban development strategy for Savamala. This set of activities considers accumulating social capital through non-intrusive, sequential small step initiatives within an overall interactive and educational process of forming a critical society – trained populace, dynamic interdependence and mutual development of both city and citizens. Human capacity within such a society is able to produce its own space with a strong impact of and on culture and ideology.

Spanish House

This is a temporary pavilion made inside the ruined building of an old captaincy which forms part of the cultural heritage of Savamala. The building is almost completely devastated; only the outside walls have resisted the ravages of time. A set of actions inside Urban Incubator aimed firstly at symbolic revitalisation of the building by crowdsourced human and social resources and then made it a communication venue for accessing general information about the project and all events organised within the project. It serves functionally and programmatically as a "space of enablement" that symbolises "a public space to be" in Savamala, where its emptiness emphasises the importance of spaciousness of public spaces, freely grown weeds envision the need for public greenery and sculptural residual concrete elements invigorate the urge for public art ("Spanish House" 2013).

Bureau Savamala

This symbolic institution figures as the critical commentator of the whole "Urban Incubator" project. It focuses on critically monitoring and analysing the contribution of artists, any creative projects and creative capital in general on the socially sustainable development of Savamala as a venue for social niches allowing alternative lifestyles which are very attractive to creative individuals. The result of this activity is a sort of record on mapping how this

neighbourhood changes and how the perception of locals and the broader public has changed accordingly (“Bureau Savamala” 2013).

We Also Love The Art of Others

This symbolic name denotes fostering a network among the artistic scene of Belgrade and beyond, whose members are all of different origins. These artists enter into dialogue in this neighbourhood and are motivated as a group to engage in artistic research and interventions in a forgotten place, where all the artistic work is adjusted to the current context. In other words, artists become socially active; they are projecting their vision of the world in a particular social context, investigating the meaning of the “utopian space” of their imagination as an enclave inside a social discourse today. The goal is to re-vitalise the traditional role of Savamala (as a place for trade, international exchange & encounters) through site-specific artistic work with the emphasis on the use of new media in order to best combine networking and innovation as basic engines of contemporary progressive society (“We Also Love the Art of Others” 2013).

Model for Savamala

This component comes from an architectural practice that has set itself a goal of building an 1:200 model of Savamala on the basis of collected local knowledge (“Model for Savamala” 2013). This 3D representation of physical structure will incorporate soft data, namely the social structure of this neighbourhood, which is not based on aesthetics, but on information. So, the information implies the tracing of all urban spaces and structures by creating a passport for each and every structure inside this area. This will comprise two parts (Lee, Yaniya 2013):

- Objective: fact-finding (i.e. height of building, type of roof, façade, number of units, age of the building)
- Subjective: the historical layers, social structure and general impression of the structures

The initial idea is to put these valuable pieces of information next to one another and form a certain sort of knowledge base. Henceforth, it will serve as a core common element of a platform for participation and collaboration. Such exhaustive database is an inexhaustible source of new appreciation and the creation of a new awareness that will continuously attract different people, stakeholders or developers to gather around so as to talk and search for the solutions of – in such a model – well represented and acknowledged urban conflicts.

3.3.3 Energizing everyday life

This line of activities envisions pop-up events and instant actions for clarifying common threads and differences of the socio-spatial model of Savamala which incorporates local knowledge, integrates the customs and needs of citizens, and activates their cultural identities. All the incorporated activities exemplify a strong tie-in between theory, practice, arts and crafts in order to indicate provisory, flexible and dynamic milestones of an urban policy for guiding the urban transformation of Savamala through the practice of social activism and an experimental learning approach.

Listen Savamala

This sound-art project traces urban changes through sound recording in order to justify that it is not only a visual phenomenon. A challenging concept behind it is that an urban change is not only a visual phenomenon and that it is also stimulating to hear the change in a city. The basic work consists of collecting sounds and feeding newly generated ones back into urban spaces in formats such as installations, concerts and radio programmes (“Slušaj Savamala” 2013).

Camenzind

This is a Serbian edition of the Swiss magazine with the same name. It is an outcome of the exchange of Serbian-Swiss-German knowledge on the built environment through four issues of this new Serbian journal covering architectural issues and urban public events, and report collected local knowledge in and about Savamala. It involves critically and creatively reporting on the progress in Savamala and on the Urban Incubator project through printed material (Camenzind magazine) and radio coverage ("Radio Savamala") ("Camenzind" 2013). In a truly participatory tradition, this activity motivates all urban actors to write and read about architecture and urbanism in Savamala. Gaining such knowledge will also give them confidence to be more actively involved in the urban transformation process through an open platform for debates, lectures, discussions, workshops, and salons.

3.3.4 Upgrading the Urban Environment

Designing the urban environment does not only improve its aesthetic qualities, but it also involves a social dimension and creates social value. In other words, its high priority is giving the residents a voice in development as well as teaching them to participate and become politically active.

Savamala Design Studio

In this manner, the aim of the Savamala design studio is to establish a participatory design practice that creates new relationships among various urban actors and stakeholders with an emphasis on encouraging Savamala residents to join to find advice and active support for their own design and construction demands and requirements. The two main parts of this practice are ("Savamala Design Studio" 2013):

- Creation of a toolbox, toolkit (toolbox = toolkit) and a manual of local knowledge, practices and cultural values: through a series of workshops with residents, other urban actors will learn from them and map their everyday practices (i.e. preserving food, recycling waste, barter economy, illegal building construction)
- Establishment of a "Public design support" agency: Experts, practitioners, artists and young professionals will work together in attempting to identify Savamala's own design, construction demands and requirements and to promote new intercultural exchange concerning construction and aesthetical principles of architecture, urbanism, arts and crafts.

School of Urban Practice

The School of Urban Practice conducts advanced educational, research and activist work that redefines design, architecture and urbanism as a field of transformative activities ("School of Urban Practice" 2013). Participants seek the way to improve the everyday environment of Savamala, whether through creating public policy, mediation, urban planning and architecture design, or any other form of design that involves citizens from the very beginning of the designing process. By working for the public interest on the site and by exchanging aspirations with local community entrepreneurs, the School of Urban Practices develops innovative concepts based on critical engagement with contemporary issues of urban commons ("Weblog Project Basement C5" 2013).

Micro factories

These small and new production facilities in Savamala, as the name says, strive to identify small suitable spaces in Savamala and attract participants in order to define and tap into a creative production process that transforms local knowledge, capacities and ideas into innovative design products. Participants collect local materials (usually from abandoned apartments or other places) and work on the design of products that reflects what they find in Savamala and its tradition of small craft workshops (i.e. carpentry). The aim is to make a social network and technical support, and re-connect the talent and experience of locals to their living environment. These new small production facilities are intended to be

microeconomic structures which shape the intense street life of a vivid neighbourhood with local pride and identity through the established relationship between urban space and industrial production (“Micro Factories” 2013).

4. Pillars of the Bottom-up Urban Development Model

<i>Urban Incubator activities</i>	<i>What these activities address</i>	<i>What these activities offer</i>	<i>What they produce</i>
Nextsavamala	Lack of an urban planning strategy and urban development actions for Savamala	<ul style="list-style-type: none"> • Use modern technology (adjustment of urban development strategies to the modern context) • Enlarge participatory body (more resources, more ideas) • Promotion (new urban actors) 	Mobilise available human capacities (locally and globally) to boost urban development in Savamala
Spanish house	Deteriorating cultural heritage and empty plots in Savamala	<ul style="list-style-type: none"> • Promote small-scale, low-budget revitalisation as beautiful, useful, productive • Spatial actualisation of sharing, collaboration, participation through the public space reserved for these activities 	<ul style="list-style-type: none"> • Promoting capacities, quality and beauty of Savamala’s cultural heritage • Integrating the local community in urban development
Bureau Savamala	Forming “creative capital”	<ul style="list-style-type: none"> • Critical approach to changes • Flexibility and dynamics of concepts for activities addressing urban development 	Mapping urban change for a sustainable urban development model
We also love the art of others	Deteriorating public spaces in Savamala	<ul style="list-style-type: none"> • New urban actors - artists • Merging of concepts for urban development in Savamala among various national and international artists • New activities (artistic events) that bring new visitors to this neighbourhood 	<ul style="list-style-type: none"> • New groups of urban actors (artists and new visitors) • New artistic activities
Model for Savamala	Lack of data on physical environment and social structure in Savamala	<ul style="list-style-type: none"> • Low-budget collection of data on social structure and built environment • Brainstorming the data through their incorporation in a spatial model • Engage motivation and capacities of young professionals 	Up-to-date soft data about this neighbourhood and its built environment and cultural heritage
Listen Savamala	Sound identity a noisy neighbourhood	A new perception and approach to the modern city - new layer of auditory data	A layer of soft data about Savamala
Camenzind	Abandoned and ruined buildings and empty plots	Glocalisation – translations of global trends and concepts in local environment of Savamala and vice versa	Representation and interpretation of collected data
Savamala design studio	Disintegration of tradition and heritage	Work on the definition of local knowledge, capacities, values, options and demands as well as building principles	Practical knowledge on culture, tradition and heritage in Savamala
School of urban practices	Weakness of regulatory framework	<ul style="list-style-type: none"> • Transfer academic knowledge into tacit knowledge • Practice based on participative bottom up projects 	New, efficient and effective approach to step by step urban transformation
Micro factories	Disappearing traditions and crafts	<ul style="list-style-type: none"> • Possibility of new production and job creation • Dissemination of knowledge and information • Improving the quality of life of local residents through production and creativity • Education through practice – real life context for young designers and craftsmen 	New activities and new urban functions

Figure 5: Analysis of Urban Incubator activities

The goal of the Savamala Civic District programme and the Urban Incubator project is to instigate qualitative urban change in Savamala that involves dealing with growing urban conflicts, fostering social potentials and benefitting from spatial capacities. In this sense, the

influence of this project is measured according to the extent it adequately answers to the current situation through the new horizons of possibilities offered by the strategy and series of activities (Figure 5). The actual results that they aim at producing in this neighbourhood are:

- Locally mobilise all available human resources to transform a crisis of aggregated urban conflicts into an opportunity for urban development: Teach the local community to benefit from the lack of institutional and financial resources for controlling and governing the exploitation of obvious locational, spatial and cultural resources in Savamala
- Globally mobilise all available human resources for a creative experiment of how the global knowledge could alter the context of Savamala and what it will bring to all the participants of this process in return: use modern mass media and ICTs as a constitutional element of urban reality in contemporary cities
- Show the efficiency and effectiveness of participation through knowledge exchange – emphasise the importance of the local community level in urban development
- Small-scale, low-budget revitalisation of public spaces and buildings – promote the transformation capacities of cultural heritage in Savamala through shared creativity of all urban actors mediated by professionals
- Build the new identity of Savamala, a new network of public spaces and a new layer of urban functions that redefine its urban structure and foster bottom-up, step-by-step urban development – a new set of cultural and artistic activities, a new group of urban actors, new pathways, and a new network of small public spaces
- Establish a strategy interpreting knowledge in flux and in context through constructing a database of up-to-date soft data about the social structure in this neighbourhood and its built environment
- Set an urban practice of “action and learning by doing” for all urban actors, stakeholders and professionals through a continuous critical reviewing of the process of urban development by the local community.

5. Model of Urban Development

Bearing in mind all the facts about the context of Savamala building an urban development model on these data implies analysing in which manner contextual resources (separated into urban conflicts, social potentials and spatial capacities) are treated inside the model, and what economic, political, spatial and cultural transformations result from these actions and how brainstorming such a procedure induces building a database on an urban environment (Figure 4). This procedure is based on principles of tactical urbanism, imagined as a cycle of step-by-step change through phases of ideation, building, measuring and learning that feeds back into itself to foster continuous improvement.

From the approximation of these results, it must be remembered that it is just a step in the process of urban development of Savamala, and that just as it brings forth conspicuous positive changes, so it also gives rise to a new and different set of urban conflicts (for example, gentrification). This pragmatic view combined with an experimental learning approach, will lead to envisioning such an urban development model as a helix. This spiral concept symbolises the idea of “bouncing back and forth” in the sense that solutions simultaneously initiate the generation of new urban conflicts that urge for not only different solutions but also new, advanced sort of knowledge and urban intelligence in general (Figure 6).

The model breaks down into three levels (local community, institutional and global), each of which conceptually repeats the core methodological procedure based on principles of tactical urbanism. The horizontal lines that connect the same phases of this procedure, albeit on

different levels, point out how urban development is actually happening, how it could be merged with urban planning and how urban intelligence could be eventually generated through this process (Figure 6).

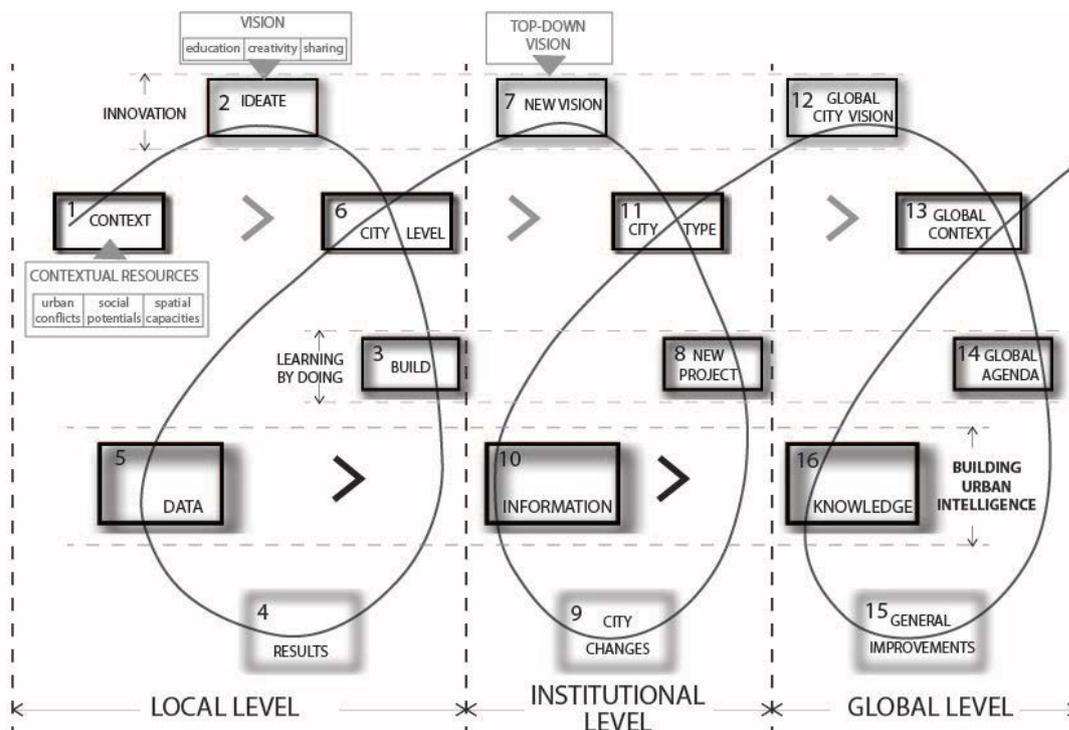


Figure 6: Model of urban development based on bottom-up activities in Savamala

6. Conclusion

The development of related activities in Savamala presents a gradually and spontaneously built intuitive bottom-up urban development model that will correspond to the needs, demands and resources of contemporary urban context in post-socialist city. A forward-thinking overview of the discrepancy between aggregated urban conflicts, on one side, and social potentials and spatial capacities, on the other, has shown that, being liberated from the economic and bureaucratic restraints of a prospering real estate market, Savamala has offered ideal conditions to put such alternative forms and approaches of city quarter development to the test.

The elaborated analysis of these activities set in the context of Savamala explains how times of crises are times of opportunity too. The spaces of obvious urban conflicts could be the polygons for changes, if we take the appropriate approach to instigate urban change. Combined with the exchange of knowledge and creative participation, these spaces could become the places for individuals, self-organised associations, public services and private entrepreneurs to congregate and display their productivity, their facility to be politically active and their ability to learn and act in a societal realm.

It has been conspicuous that although this new network of provisional public spaces and the creative impulse that made Savamala a very lively environment spread almost unstoppably, its urban essence within the image of the whole city of Belgrade stays the same with its run-down buildings, derelict empty plots and open spaces; plus its lack of a sustainable, clear, long-term economic model. Moreover, while the presence of activists in the neighbourhood contributes to the re-vitalisation of urban space and forms “creative capital”, it is at the same time the precondition for gentrification.

However, such new context comes as a result of this first phase of bottom-up urban development and craves for the next round of actions that will more actively involve the authorities, official planning institutions, and powerful economic actors in order to link these

bottom-up changes in the urban systems of the city to the top-down challenges and strategies by emphasising diversity and reciprocity in the nature of the on-going transformations through an overlay of different urban scenarios (according to different urban actors and stakeholders).

To sum up, it is this spiral of relations and influences between different levels and layers of bottom-up urban development and top-down planning through a kind of cross-pollination transfer of concepts and frameworks that initiates the creation of novelty and solutions that are well-adjusted not only to the local context but to global trends as well. An interactive system with an unlimited potential to originate diverse opportunities for new rounds of exchanges generates vibrant and fluid context open to permanent transformation. Therefore, this economy of social exchange is continually contributing to progressive urban development.

7. References

- Amin, Ash. (2006) *The Good City*. *Urban Studies* 43 (5-6) (May 1): 1009–1023.
- Bureau Savamala. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/bur/enindex.htm> [Accessed 28 July 2013]
- Camenzind. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/cam/enindex.htm> [Accessed 29 July 2013]
- Hess, Charlotte, and Elinor Ostrom. (2007) *Understanding Knowledge as a Commons: From Theory to Practice*. Cambridge, Mass: MIT Press.
- Lee, Yaniya. (2013) A Model for Savamala. *Camenzind Belgrade* 1
- Lydon, Mike, ed. (2012) *Tactical Urbanism*. Available at: http://streetplans.org/research_and_writing.php
- Meroni. (2007) *Creative Communities, People Inventing Sustainable Ways of Living*. Milano, Italy: Edizioni POLI.design.
- Micro Factories. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/mfa/enindex.htm> [Accessed 28 July 2013]
- Mikser Festival. (2012) Belgrade: Mikser.
- Model for Savamala. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/mod/enindex.htm> [Accessed 28 July 2013]
- Nextsavamala. (2013) Available at: <http://www.nextsavamala.net/> [Accessed 28 July 2013]
- Savamala Design Studio. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/des/enindex.htm> [Accessed 28 July 2013]
- School of Urban Practice. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/sch/enindex.htm> [Accessed 29 July 2013]
- Slušaj Savamala. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/slu/enindex.htm> [Accessed 29 July 2013]
- Spanish House. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/spa/enindex.htm> [Accessed 28 July 2013]
- Urban Incubator Belgrade. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/sav/enindex.htm> [Accessed 29 July 2013]
- We Also Love the Art of Others. (2013) Available at: <http://www.goethe.de/ins/cs/bel/prj/uic/prj/3rd/enindex.htm> [Accessed 29 July 2013]
- Weblog Project Basement C5. (2013) Available at: <http://projectc5.blogspot.it/2013/04/school-of-urban-practices.html> [Accessed 29 July 2013]

The danger of community engagement as an exclusion tool: four case studies in four different scales in Brasilia, Brazil

Gabriela DE SOUZA TENORIO, Universidade de Brasilia, Brasil

1. Introduction

Community engagement in the urban planning process, despite being essential, must always be put into perspective. This is because most citizens have difficulty in thinking in a systemic, comprehensive way while seeking to help their cities carry out planning. In any intervention scale, it is difficult to achieve a kind of public participation that will be inclusive, unless there can be a form of education that can anticipate what will be the implications for the city as a whole, of the local wishes of individuals and groups. Education introduces a collective spirit to the realm of decisions, clarifies the role and nature of the public domain, showing its value to the city and society. Although democratic representation is structured from the relationship of the citizen with a spatial basis, it is necessary to emphasize that places do not belong to its residents, but to the city. The paper illustrates how citizen involvement may show intolerance and segregation desires with four case studies that took place in the capital of Brazil recently and discusses attitudes desirable to obtain a conscious and responsible community engagement.

2. Brasília and community engagement

Brasilia is one of the most sprawling cities in the world, and its population density increases further away from the center. The Central Business District/CBD, where most of the formal jobs are, is situated in the heart of the Pilot Plan, the area where the original design of the city - created by architect Lucio Costa - is materialized, and which has been regarded as World Heritage Site, thirty years later. In 2010, the estimated population was 2,570,160, but less than 10% lives in the Pilot Plan. The rest lives farther away, either in neighborhoods with suburban characteristics, dormitory-neighborhoods or gated communities.

The city's original modernist design brings unfavorable features for its inhabitants' socialization. These have been aggravated by the kind of political decisions made throughout its history, such as those that currently determine its metropolitan structure. With rare exceptions, social classes are separated territorially in 'niches' of homogeneous communities that are not used to share their interests with others. Besides, there are very few public spaces that are suited to bringing them together and allowing them to overcome their differences. Unfortunately, new endeavors coming to CBD, as *Setor Noroeste* (Northwest Sector, discussed in Tenorio & Germano, 2010), perpetuate this exclusionary posture, since they are designed to shelter only a portion of the population, offering only one - expensive - type of housing.

As a result, especially within the heritage area and other upscale adjacent neighborhoods, people use to live, as Freitas, 2010, stated, in a "state of excessive welfare". "The residents of the Pilot Plan and other noble areas have lost the tolerance and flexibility one must have to confront a metropolis like any other in the world".

Not surprisingly, the affected community generally rejects the changes needed to meet the challenges that the city growth imposes, whenever it means to bring into "their" space people

other than those who they are accustomed to live with. As an aggravating factor comes the view of many residents who believe that any action will violate the protection laws regarding Brasília as World Heritage Site, and will make it loses its designation by the United Nations Educational, Scientific and Cultural Organization/UNESCO. Thus, things must remain as they are, even though this means that the city will become increasingly non inclusive.

Four situations in different scales - from local to metropolitan – that occurred recently show how community engagement can reflect exclusion actions. *Figure 1* shows Brasília, understood here as the whole Federal District/FD, and highlights the locations studied.

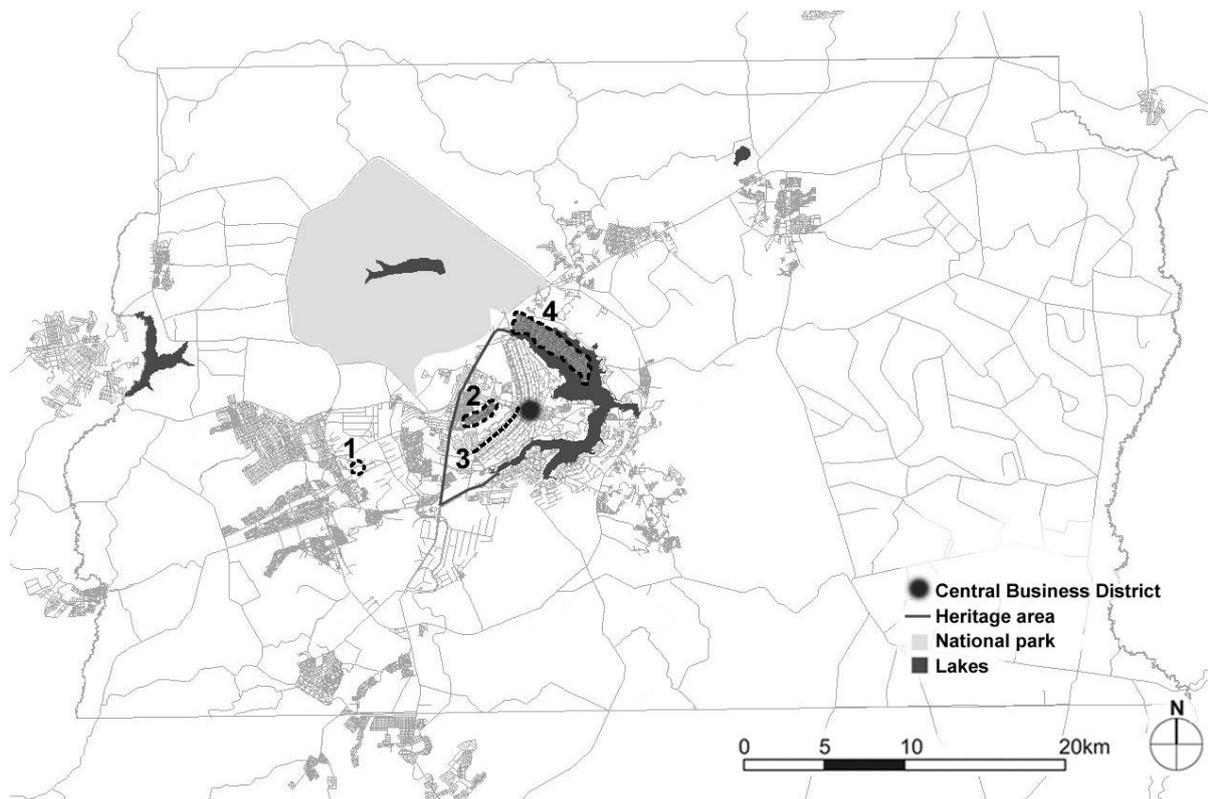


Figure 1: Distrito Federal: axial map. The nuclei outside the polygon belong to another State but depend on Brasília. Numbered, the location of the case studies: 1. Jandaia Square in Aguas Claras; 2. Setor Sudoeste; 3. South W3 Avenue; 4. Lago Norte

3. Four case studies in four different scales

3.1 Jandaia Square, block 205, Aguas Claras - local scale

In 2008, Jandaia Square was built on a plot surrounded by the buildings of block 205 in Aguas Claras, a middle-class district of DF. According to the newspaper *Correio Braziliense*, the residents gathered together and requested authorization from the local administration to carry out a design, and the company responsible for constructing most of the local buildings, built it without any burden on the authorities. Thus, on the initiative and community engagement, a public space was born, with lawns, palm trees, pavements, benches, a fountain and an amphitheatre.

In a dense borough with very poor public realm like Aguas Claras, any attempt to offer a public place has great chances of working at a local level and even being extended across the borders of the immediate neighborhood and attracting residents from other places. This is what in fact happened. The Jandaia Square proved to be a success. This was because it started to be used by a reasonable number of people who were to some extent quite varied (with a good proportion of women and children) and included both people from the nearby

buildings and from other locations, who carried out various activities there. However, among these, there were some activities that caused trouble to the residents and, as a result, they began to think that the establishment of the square had been a mistake.

Less than two years later, the local administration destroyed the fountain and buried the amphitheatre at the request of the residents themselves. (Calcagno, 2009) They made the square less attractive, damaging it, since this was the solution put forward by the majority (Figure 2)



Figure 2: Brasilia, Brasil. Aguas Claras. Jandaia Square as it was originally constructed (on the left) and its current state (on the right). Source: Google Earth.

Although the space has been created on the initiative of the community, it does not belong to it: it belongs to the city. That is why the local administration behavior is so questionable: it was only concerned with the anxieties of the neighboring residents and overlooked the wider context. Besides, when it comes to a place used by human beings (any place, whether public or not), it is no surprise that problematic activities can also occur. This is not to suggest that the maintenance of the square should be discouraged so that it can be kept in the original condition in which it was found, but rather useful information for how to deal with it.

It would be appropriate if the local administration, when was first made aware of the request of the residents, had carried out a full investigation of the place. Public money was used on destroying the fountain and burying the ampitheatre (and this is not any less serious because they had been built with private funds), when it could have been spent (at a much lower cost) in studying the square itself: what activities took place, their frequency, which was involved, exact places and circumstances. On the basis of this information, they could have circumvented the problem by drawing up a list of possible courses of action that could be put into effect while they were monitoring the results. Together with this, they could have sought to make the community fully aware of the benefits of public life and the need for tolerance, while taking the necessary steps to suggest and support events that could strengthen the relationship of the community with that particular space. Ans, of course, if necessary, they could involve the local police.

Clearly it is disturbing that some people who frequent the square intimidate others, as well as the fact that some of the activities witnessed by the residents of block 205 are reprehensible, but is it the case that there are just “offending people” doing “things wrong”? Are there not also “decent people” doing “things right”? Of course there are. And if they were compared, what would be the proportion of those who were “right” or “wrong”? To find this out, it would be necessary to observe, study and get to know the square so that an intervention could be made in a constructive way. Thus, the children would not have to see the destruction of the amphitheatre where they used to play during the morning simply because undesirable activities took place there on Friday and Saturday nights. Admittedly, it would be hard work but it would be worthwhile: a public space is an invaluable asset.

It may be that the residents' expectations have been that the square would fill only their requirements, and that would be intended only to support the uses they have imagined. After all, the square is the outcome of their own design and initiative, and spaces created based on this dynamic tend to reflect the community with which they are situated. So, it is natural that the residents look after them as if they were theirs, and is common the belief that, if any misuse was made of the place, it was probably caused by someone from outside. Thus, when the square began to "cause problems" (or rather, it was so successful that it led to being a mistake), it was no accident that these were attributed to "undesirable visitors", even though there was no evidence to show that it was not local residents who were responsible for the loud music, heavy drinking, drug-taking or acts of obscenity.

3.2 The Public School, Setor Sudoeste - neighborhood scale

The Setor Sudoeste (Southwest Sector) is a borough near to the Pilot Plan that was created in the late 80's. Despite having mixed-use buildings and a major shopping street, the neighborhood is mainly divided into "noble" Sudoeste, where more than 90% of the residents belong to the upper-middle and upper classes, and "economic" Sudoeste, where this number falls to a little less than 80%. As can be observed, people in the borough show little variation of income levels, which makes it a homogenous community.

A few years ago, two episodes demonstrated the frame of mind of some residents of the "noble" part of the neighborhood. In the first, they adopted a stance against the construction of sports courts "to avoid the gathering of yokels" (Alves, 2009). The label of yokel ('*peao*' in Portuguese) has pejorative connotations since it is used to describe farm labourers, people in general who have little education. The fact that it was attached to the potential users of public sports grounds makes it clear that this would not be applicable to the and, thus, would not be an activity they would wish to carry out. This situation resembles, on a similar scale, what was discussed previously.

In the second episode, the residents lined up against the construction of a public school, even though it had been embodied in the original project of the *superquadras* (superblocks) of Brasilia: a spatial pattern followed by the "noble" Sudoeste. According to the Report on the Pilot Plan (document with the city's design principles) "within these *superquadras*, the residential buildings can be arranged in the most varied way and in compliance with two general principles: a maximum uniform building high, perhaps six floors and *pilotis*, and separation of road and pedestrian traffic, especially by allowing access to primary schools and the facilities that exist within each block" (Costa, 1991). Lucio Costa had a utopian ideal of equity, citizen dignity and efficiency of public services, in his proposal for Brasilia.

The members of the Regional Administration were in a state of perplexity when a group of people claim that the public school was not necessary because all their children studied in private schools and this would only be "for the children of domestic servants" (Alves, 2009). It should be made clear that Brazilian society is profoundly unequal, and there is a huge number of people with little education and few qualifications. Thus, domestic servants are readily available to the middle class. This means that a building with 48 apartments is very likely able to offer work to 48 domestic employees either on a monthly or daily basis.

Apart from the depressing fact that the residents' request confirms the prevailing skepticism about the value of public education in Brazil, this attitude reflects a view that, at the very least, is mean-spirited about our society. They ignore the fact that these workers would be able to leave their children close to their place of work (which is at a distance of at least 20km from their houses). And what would be the problem if the children of these domestic servants – or rather children in general who are at a different socio-economic and cultural level than the residents' children – attended a school close to the residential area? A bad

influence? Degeneration? The prejudiced and non inclusive view lingers on. Even today, Setor Sudoeste does not have a public school.

3.3 Change of use in W3 South Avenue - city scale

W3 Avenue is one of the city's main public transport routes and runs along the entire Pilot Plan. According to the original conception of the city, it was intended to be a bordering service highway, which would allow the supply of wholesale goods. This would be located on the east side, while on the west side there would be gardens and orchards.

The original plan was never implemented. Even before the inauguration of the city, where there would be gardens and orchards, single-family row houses were built to serve the first skilled workers who came to the city with their families (Figure 3).

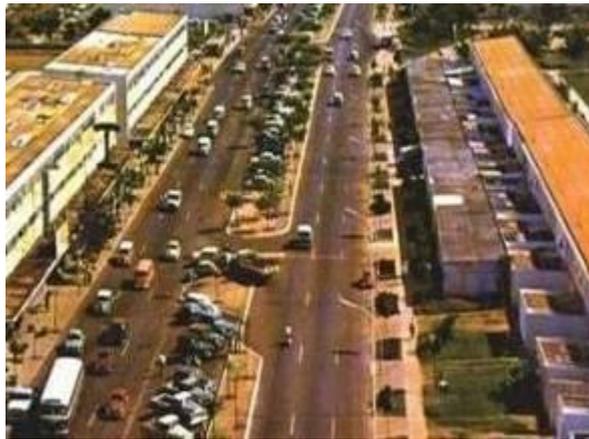


Figure 3: W3 South Avenue in 1969. Businesses, services and dwellings on the East side ("500" blocks on the left) and residences on the West side ("700" blocks, on the right). Source: Arquivo Público do Distrito Federal.

As a result of the delay in establishing the central sectors of the city, which were intended to offer commercial and entertainment sectors, the southern stretch of the W3 began to become the real cultural and commercial heart of the city until the 1970s. According to Holanda et al, 2003, this was the 'golden era', and from then onwards, the avenue entered a period of decadence and deterioration. Among the various reasons for this decline, such as the consolidation of activities in the city center, is the avenue profile. The fact that it only has commerce and services on one side, and residential dwellings on the other, makes it ineffective in becoming a real "pole of attraction", as it had before. However, since some years ago a trend can be observed in which the residential dwellings adjoining - or close to - the avenue began to offer a wide range of services such as beauty parlours, lawyer's offices, esoteric consultancies and guest houses. These were a symptom of the need to take advantage of the infrastructure facilities and attractive sites in Brasília.

The residents complain about these changes, especially the guest houses, which, for them, are apparently places that host the worst of the human species: "They take in criminals, drug dealers and prostitutes", one resident declared (MADER, 2011). According to Holanda, 2012, it is necessary "to distinguish between *urban codes* and *posture codes*. The first regulates building shape and land use, the latter regulates behaviour - desirable practices of urbanity that allows good coexistence. If there are noise, prostitution, drug traffic etc., anywhere in the city, in the adjoining houses of W3 avenue or in the internal houses of the "700" blocks, it is up to the government to repress them. They are not urban problems, but police ones."

Putting aside what statements like the resident's (and they are not unusual) reveal about prejudice, misinformation and generalization, some thought should be given to the real nature of the citizens who actually come to visit the city. It should be taken into account that

the "official" places for accommodation in the Pilot Plan are the expensive ones that exist in the south and north hotel sectors. Although they are not far away from public transport stops, they are not well connected to them. Nonetheless, it must be admitted that accommodation on the W3 can be very convenient and practical for tourists who are less well-off and not in a position to pay for taxis or rent cars.

At the end of 2009, the Federal District Government/FDG issued an official order for drawing up PPCUB (Plan for the Preservation of the Urban System of Brasilia), the purpose of which was to create a master plan for the heritage area aiming to recommend ways for development and for solving problems without spoiling the essential character of the city as originally conceived. After carrying out some studies, the appointed team came up with the suggestion that there should be a change in the land use of the houses in the west limit of W3 avenue, but there was a negative reaction. "We are not going to put up with traders here" stated the community mayor of block 705.

It is clear the residents' partial and exclusionary attitude. As puts Holanda, 2012: "The existence of services in residential area buildings is not necessarily a problem, in Brasilia or in any other city. Moreover, the current discussion is fraught with 'make believe'. For example, make believe there are no offices operating in homes within blocks '700'. Nobody argues against that - and nobody should. They do not bother anyone. But the residents argue against the *popular* services ranging close to the avenue, exactly for this reason: because they are *popular* and do not correspond to the highest income levels prevailing inside the '700' residential blocks".

At the end, PPCUB has retreated and left the '700' land use the way it has always been - single family houses. A lost opportunity. A change like this would be the first step in legalize irregular activities and revitalize the avenue, by making use of its full potential for business and services. The whole city would benefit.

3.4 Lago Norte's second bridge - metropolitan scale

Lago Norte (North Lake) is a borough with suburban features that is situated on a peninsula. Its main residential model consists of single family houses on plots of 1,200 sq. m (the value of a sq m of land is currently around USD 690) which makes its residents the holders of the second highest average monthly domestic income of Brasilia. There is an extremely low supply of trading activities, services or employment, thus the borough depends on the Pilot Plan. Its population is highly motorized and reliant on private cars, and it is common to find a proportion of one car per resident able to drive.

In this area, the only connection to the city center – Bragueto bridge – is becoming increasingly inadequate since it experiences serious congestion at peak hours, day by day. Some redesigning of its access has been carried out, but there has always been an idea of building a second bridge. The supporters of this scheme argue for better links with the city, so that alternative routes can be established to improve traffic in different ways and reduce the time people spend moving around. However, the residents have never welcomed the idea.

For several years the subject lay dormant and seemed to be insoluble, until it was officially again brought up in 2008 by the FDG. It introduced the Estrada Parque Universidade de Brasilia (EPUB) scheme - which consisted of two bridges and a highway. As well as providing more alternatives for the population Lago Norte itself, it would be a choice for the residents of districts located further away, such as Sobradinho, Planaltina, Varjao and Paranoa. In addition, the residents of the gated communities in the north section of the city could go to Asa Norte without necessarily having to cross the existing bridge (Figure 4).

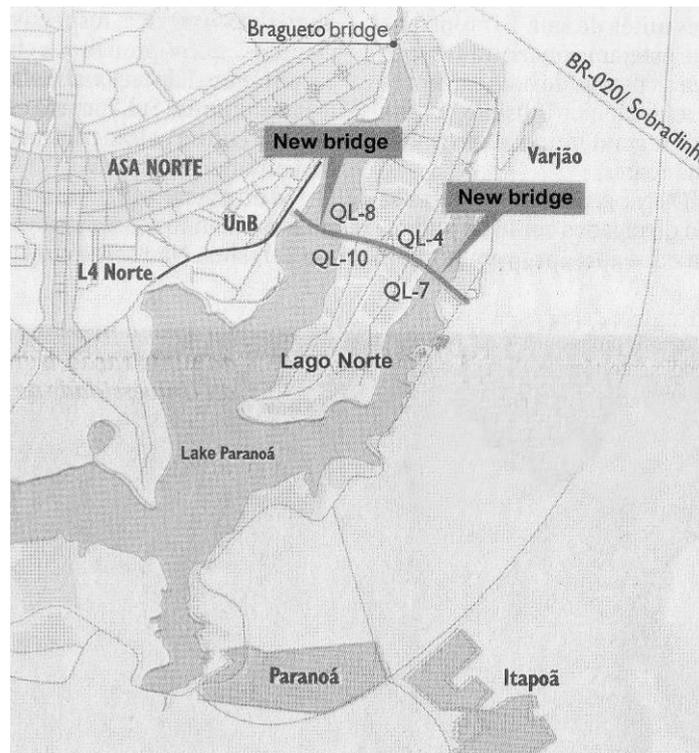


Figure 4: Brasília, Brasil. New bridges for Lago Norte. Fonte: Rodrigues, 2008.

There was less resistance: when the residents were faced with the problems of congestion at their only outlet, they were more willing to accept the idea of being connected to Asa Norte. However, they are reluctant to agree to the connection with Paranoá. One common charge is that this will spoil the character of the place by turning it into a place of through traffic.

The administrator of the borough at that time stated that he was against adding the section of the bridge that would forge a link with Paranoá. "The exit is really necessary for the [Pilot] Plan. However, there is still no need to carry it out on the other side" (Rodrigues, 2008). So... the connection to the Pilot Plan is necessary for the population of Lago Norte, which in 2010 consisted of 41,627 people, but is it not needed for those 453,047 inhabitants (a population more than 10 times higher) living in the north portion of the Federal District?

No fundo, não há como negar que há, sim, outra razão para a recusa. A opinião de um morador a deixa transparecer: "Moro no lago norte há 26 anos e gostaria de ver esta ponte feita, pois só temos uma saída. Mas fazer a perna que liga ao Paranoá não tem razão de ser, pois já tem a saída para o Varjão. Mas não é por segurança, porque se o cara quiser vir até o Lago Norte, vem até remando" (Rodrigues, 2008). Claro está que esse "cara" a que se refere o morador é um ladrão. A população do Lago Norte, isolada em sua península, funciona como um grande condomínio fechado, um grande grupo homogêneo, que tem tão mais receio de outros grupos quanto mais diferentes de si eles forem. Então ladrões só podem vir das bandas do Paranoá? Não há ladrões na Asa Norte ou no próprio Lago Norte? O posicionamento preconceituoso e excludente vem adiando uma solução que proporcionaria um melhor ir e vir para uma parte grande da metrópole.

It cannot be denied that there is, indeed, another reason for the rejection. The opinion of one resident makes this clear: "I have been living at Lago Norte for 26 years and I would like to see this bridge built because we only have one outlet. But to add the 'leg' that links to Paranoá does not make sense because we already have an outlet to Varjão. But it's not for safety reasons because if a guy wants to come to Lago Norte, he can come here by rowing a boat" (Rodrigues, 2008). It is clear that this "guy" is a thief. The people of Lago Norte are isolated on their peninsula and operate like a large gated community, a big homogeneous

group which is very afraid of other groups that are different from themselves. So thieves can only come from Paranoa? Are there no thieves in Asa Norte or Lago Norte? The prejudice is given precedence over a solution that can allow a better means of going to and from a large part of the metropolis.

4. Conclusion

Brazilian law states that urban policy should aim at the full development of the social functions of the city through the democratic management, which popular participation is an integral part (Brazil, 2001). Gomes, 2012, remembering the birth of democracy, states that the reforms of Cleisthenes, in Ancient Greece, essentially replaced "political representation based on tribes, by a space-based representation, established by a territorial division". The democratic governance is so grounded in the concept that the citizen is bound to a spatial component and, therefore, in their engagement, has responsibilities to the territory it occupies and represents, as well as has needs and desires related to it.

Planners need the vision and experience of this community member. According to the Project for Public Spaces/PPS, an American organization that deals with public spaces on the basis of public participation, this community member "is anybody who plays a role in the participation of a specific place": resident, owner of business, worker, member of institutions, official representative, member of some group etc. In short, anyone that has ties to the area is useful and indispensable to the planning process, in any of its levels, regardless of their involvement.

The relation between citizen and place or, in a broader way, between society and space, is explained, for instance, by the Space Syntax Theory. According to its authors, Bill Hillier and Julienne Hanson: "We read space and anticipate a lifestyle". The theory states that there is a social logic of space, as well as there is a spatial logic of societies. Its main axiom is: "spatial organisation is a function of the form of social solidarity" (Hillier & Hanson, 2003), social solidarity being the way people meet in public spaces: in a random way, in diverse groups; or in a programmed way, in homogeneous groups. The authors explain that most societies show, in all levels, both types of solidarity.

Configurational attributes of places (also called spatial patterns by the theory) are in harmony with social expectations that are based on people's cultural standards, of which Holanda, 2002 draws "two millennial socio spatial paradigms": the paradigm of formality and the paradigm of urbanity. The first one is aligned to the social structure that Durkheim called "mechanical solidarity" (terms found in the book *The division of labour in society*, 1893), for which the city is organized through hierarchy, dispersion, specialization and segregation; its parts having well-defined and controlled borders. The latter is aligned to the Durkheim's "organic solidarity" that historically emerged with the social division of labour and complementarity of activities and roles. Implies low hierarchy among its parts, which must be complementary, interdependent and integrated.

Holanda, by studying ancient cultures and their social structures, states that, historically, more democratic societies have their cities designed according to the paradigm of urbanity (2002, p. 130). The reverse is also true: less democratic societies, which feature large social inequalities, have cities designed according to the paradigm of formality.

This finding makes it desirable to search for the establishment, in addressing urban problems, of solutions that undergo spatial patterns more conducive to the shelter of a democratic society. They would be those that minimize distances, smooth borders, integrate parts, extend possibilities of use, favor diversity etc. This requires an ever-expanding vision that often exceeds the limits of the neighborhood and considers the urban system as a

whole. However, people will not always be prepared to - or interested in - take into account the broader impacts of their local choices. And the more homogeneous the community involved, the more it tends to resist changing.

Here is where education plays a main role in community engagement process. Interviews, discussion groups and meetings are the most widely used activities to allow people closely involved in the situation in question, to express their feelings and become involved in the process of creation, by stating their needs and desires. But these occasions for gathering input for the preparation of normative instruments relative to the city or endorsing proposals, cannot take place without a dynamic that allows information to be transmitted. Nor is it possible only to have the residents or homogeneous groups as representatives. The residents surrounding the Jandaia Square were listened to, but what about those who came from other places to make use of it? The residents of Setor Sudoeste were listened to, but was this the case with the domestic employees? The residents of the "700" blocks were listened to, but was any attention paid to those that use the area, though living in other districts or the users – "respectable" and law-abiding people – of the guest houses? The residents of Lago Norte were listened to, but how far does this apply to those who live further away from the Brageto bridge?

The case studies show how attitudes of homogeneous groups in the process of community engagement can be extremely exclusive. The voice of the people is not necessarily the voice of God, in contrast to what is stated in this proverb. The support and involvement of citizens in urban issues should act in a way that improves the city and makes it more inclusive and fair. Planners and urban designers must be aware to this.

References

- Brasil (2001) Lei no 10.257. Estatuto da Cidade. Regulamenta os arts. 182 e 183 da Constituição Federal, estabelece diretrizes gerais da política urbana e dá outras providências
- Brasília (2012). "Projeto de lei complementar 052/2012. Aprova o Plano de Preservação do Conjunto Urbanístico de Brasília e dá outras providências". www.sedhab.df.gov.br
- Calcagno, Luiz (2009). "Uma praça em troca da paz". *Correio Braziliense - Cidades* (31 dec)
- Costa, Lucio (1991). *Relatório do Plano Piloto de Brasília*. Brasília: GDF
- Freitas, Conceição (2010). "Crônica da cidade - Vivendo no vazio". *Correio Braziliense - Cidades* (11 feb)
- Gomes, Paulo César (2012). *A condição Urbana*, Rio de Janeiro: Bertrand Brasil.
- Hillier, Bill & Hanson, Julienne (2003). *The social logic of space*, Cambridge: Cambridge University Press
- Holanda, Frederico de (2002). *O espaço de exceção*, Brasília: Editora Universidade de Brasília
- Holanda, Frederico de et al. (2003). *Arquitetura & Urbanidade*, São Paulo: Pro
- Holanda, Frederico de (2007). "Be aware of local properties". 6th International Space Syntax Symposium - Proceedings, pp. 82_1-13
- Holanda, Frederico de (2012). "O mundo das miudezas: Plano de Preservação do Conjunto Urbanístico de Brasília". Natal: II Encontro da Associação Nacional de Pesquisa e Pós-graduação em Arquitetura e Urbanismo
- Project for Public Spaces. *How to turn a place around - A handbook for creating successful public spaces*, Nova York: Project for Public Spaces
- Rodrigues, Gizella (2008). "Duas novas pontes e uma rodovia". *Correio Braziliense - Cidades* (15 jun)
- Tenorio, Gabriela & Santos Júnior, Reinaldo (2010). "Setor Noroeste, Brasília - can an elite neighborhood be considered green?". 46^o ISOCARP Congress (sep)



From top down to bottom up -a somersault?

including

Organisation & management tools to guide bottom up processes

HELENACHAJA HEYNING
WILMA VAN DER BRUGGEN

From top down to bottom up – a somersault?

HelenaChaja Heyning, Wilma van der Bruggen, The Netherlands¹

*Faced with the aftermath of the financial and economic crisis in The Netherlands and the financial repercussions of the ongoing decentralisation process, many municipal authorities have great difficulties to cope with the demands, needs and expectations of citizens. Land development (houses, offices) a major source of municipal income, has come to an almost complete standstill and so do the much needed revenues: the 'old' money has gone and no new profits are in view. 'Future today is not what is has been in the past.'*²

What came to flourish is civic action in all shapes and sizes, from community to single stakeholder's engagement, from energy corporation and care trust to a build-your-own-home movement. The Dutch Big Society and Civic Economy are in the centre of 'let's do it ourselves'. A paradigm shift or a temporary revival of old bygone good neighbourliness and citizenship never really forgotten?

How do authorities, used to top down governance, handle the message of the bottom up movement: con amore or grumbling, is it a tiny step or a somersault, how does it affect their position of power, do they trust citizens?

And how about the city planner? Is he/she dancing and pitching along with the waves of power, is he/she fully engaging the stakeholders in our communities, what tools does he/she need to assist citizens in their self organisation processes? What techniques and strategies exist to address competing interests and reduce conflict? Key question: is a turnaround in planner's education and/or specific training needed?

1. The Times They Are a-Changing³

Until recently spatial development in The Netherlands was for the major part the prerogative of the government (state, provinces) or the local authorities (municipalities), in their slipstream the well-known housing corporations and the almighty private property and real estate companies/contractors. Buying farmland and selling plots for houses, offices etc. was an important component of the municipalities budget revenues, needed for expensive urban renewal elsewhere, parking garages, village library etc. The crisis put these revenues at serious risk: the 'fleshpots of Egypt' are empty and many municipalities groan under heavy financial losses of land bought but not developed as the house and office market collapsed. The 'old' money has gone, the 'new' generation of value is not yet clear. We are in the middle of the downward Kondratiev wave.⁴



Fig. 1: Property and Real Estate companies want to get out but are told 'the next bus stop takes another 7 or 8 years...' (FD)

2. Dutch Big Society and Civic Economy

In the wake of the financial crisis and ailing economy a mixture of the UK's 'Big Society'⁵ and 'Civic Economy'⁶ began to flourish in The Netherlands. The Government's Policy Scientist Council (WRR) occupied centre stage with the report 'Trust in Civilians' asking for more trust between democratic institutions and citizens 'because they need one another to accomplish shared goals'.⁷ Central government started to push the idea of the *sustainable society* taking care of itself 'as 'the state can't take care of everybody and everything anymore'.⁸ It is said that 'citizens are expected to display more self-sufficiency and responsibility and less reliance on subsidies and state-paid care'.

In the past years the Civic Economy became a steady under-current of societal initiatives and business cases based on the mostly local economy. Some city Platforms of Creativity & Innovation were set up and attracted a wide range of 'change-makers' finding ways to a new economy and a new bottom up city planning. Something similar can be said of the Eo Wijers Foundation⁹ promoting residents initiatives and new modes of profit in their 9th and upcoming 10th planning competition.

The old warehouse 'The Taciturn' ('De Zwijger', the nickname of prince William of Orange [1533-1584], the progenitor of the Dutch royal family) is the hotspot of community and stakeholder engagement in Amsterdam: the Platform of Creativity and Innovation's credo is 'what inspires you and how do you get there'. Inspiration cross-pollinates: the Platform is multifaceted and embraces all kinds of professionals. Some deal with city planning or photography, some with design or gaming, some are analogue some go digital, some are entrepreneurial housewives and others Gyro Geerlose.¹⁰ Well known scientists and politicians are regular visitors and/or keynote speakers. The Platform is a forum and also a beehive for professionals from entirely different backgrounds and many, many eager youngsters who meet and discuss, perform pitches, consult, explain, inspire each other, explore the 'in between spaces' and rising the occasion to team up. An increasing number and great diversity of these change-makers are getting on with the job of re-making the local economy and places.

Facts & figures Pakhuis: Visitors: ca 35.000/year; Meetings: ca 250-300/year

3. Paradigm shift or major transition?

'There is nothing new under the Dutch sun' one could say as practical neighbourly help has always existed in some way; farmers had their own cooperative bank and the country's present 5,5 million volunteers are a big asset (2011, 44% of the Dutch population). However the present bottom up movement looks like leading more than before, rumour has it that it asks for more power for people to take decisions.¹¹ Scientists and Advisory Councils talk about a paradigm shift and a major transition. The fundamental drivers of this shift might be 1) a growing recognition that we need a different economic development model and 2) a fundamental transformation in how people and organisations can communicate and collaborate.¹² The great thing is that it shows the type of 'entrepreneurship' that generates civic action and what it can achieve measured by profit and social progress. Prudence is called especially in situations where initiatives are new born and fragile –it is one thing to be willing but quite another to be able. This is even more critical as many authorities clearly extol and overestimate the virtue of their residents and their potentials to address the upcoming social and cultural issues (e.g. taking over the care of the elderly or handicapped).

There are many civic actions and ventures in The Netherlands: from the single resident's 'build your own house' to co-productions and social enterprises like the community energy corporation (wind

farm, bio-burner), urban agriculture on empty building plots, babies-and-mothers-meeting places, 'care' trusts and neighbourhood-banks and the innovating 'daring designs' or social designs (e.g. container) or the gaming industry (look for the game-tool-for-pigs). Some initiatives go regional like the farmers nature associations¹³ treasuring their property and identity and alongside preserving the local landscape and nature. The notion of the 'circular city' and 'circular economy' pops up and outlines the bigger picture.

Some initiatives are shared (public-private), others are 100% private using modern co-investment and co-information techniques: crowd funding, crowd sourcing, open source, serious gaming, etc.

4. Shift of power: a somersault?

Quite a few Dutch authorities are confused and daunted. They don't know how to handle the situation: stay in the familiar top down position or join the bottom up movement? Can we trust the citizens? How about their abilities? How to stay in control and powerful enough to pull a lot of strings? These policymakers often 'oppose', resist, grumble and cling to their 'pocket veto' driven by self-interest –plenty of idea-killers. They are in the middle of a 'perfect storm'. However some authorities count themselves fortunate to share the power and energy with their residents. E.g. the experiment in the Amsterdam East borough (112.000 residents)¹⁴ where the yearly budget in a preliminary draft including the imperative policy, projects and actions, is made transparent, and in a collaborative approach shared with the local residents and entrepreneurs. Next, borough council and residents agree upon what residents/ entrepreneurs pick up and what authorities accomplish. The process is two-way: facilitating (↓) and boosting (↑). Another example is Almere New Town where thousands of families (even low income) can buy a plot of land and build their own house to their own taste¹⁵ –an example of large-scale micro-entrepreneurship unprecedented in The Netherlands (fig. 2).



Fig. 2: Almere New Town – Almere Poort: small scale entrepreneurship

5. From state domination to joint business case: win – win

The present financial situation in Holland is an impetus for a new planning approach.¹⁶ Municipalities might be poor however some private parties, e.g. local entrepreneurs or a (group of) resident(s), are often quite willing to invest in their property if it augments the value or is otherwise rewarding. Local authorities must put this kind of citizens' action/private initiative into the perspective of e.g. urban renewal (regeneration) and place-shaping.

Changing a private run down industrial site in the middle of a town into a green residential area upgrades the surrounding neighbourhood socially, physically and financially (raising value of nearby estates). Previously, the municipality would have bought the premises and redeveloped them, but money lacking the initiative of a private owner should be cheered. The return on capital and investment is for the private owner(s), in due time the municipality will receive the benefits of local tax levying (property tax etc.). In a period of a weak economy this is a window of opportunity with a mutually beneficial outcome and added value. The private investment might even create much spin off and undo an unprecedented multiplier effect.¹⁷

We have seen that the local investors want to control the process, after all it's their property, their money and effort (and risk!). Much asked questions are: is it financially rewarding, how long does it take to get a building permit, how to keep out endless bureaucracy, can I do it on an individual basis or is collective action needed (with neighbouring landowners), will local authorities help, how about other landowners and local action groups? Policy makers in turn should trust the private investors and provide them with scope for involvement: authorities' greater vision and message (framing) should be one of a steadfast ally and facilitator as well as a partner of local society -thus sharing the traditional one-sided power. 'To recognize when they are needed and to stay away when they are not' is a precondition for success.

6. Must the city planner reinvent him-/herself?

'The Times They Are a-Changing': how about the city planner? Many will work on both sides including the interface of institutions¹⁸: the traditional 'indoor-world' of the well known 'old client' e.g. the authorities/property & real estate companies, and the new 'outdoor-world' e.g. the civic stakeholders who take the initiative. What skills, tools and expertise does the planner need to work on that interface and/or to assist citizens in their bottom up actions and self organisation?

In 'old' times (upward Kondratieff wave) planning the city was the exclusive property of the authorities, proficient in policy, procedures, etc.; there was some obligatory 'citizens participation' (most lowest steps Arnstein ladder¹⁹). Most developments, e.g. new housing and industrial estates, proceeded on a pragmatic project-based approach: one client, phases clearly cut/described and an ever narrowing fish-trapped/fyke approach > it's the result that counts within a short well defined period minimising the risks (fig. 3+4).

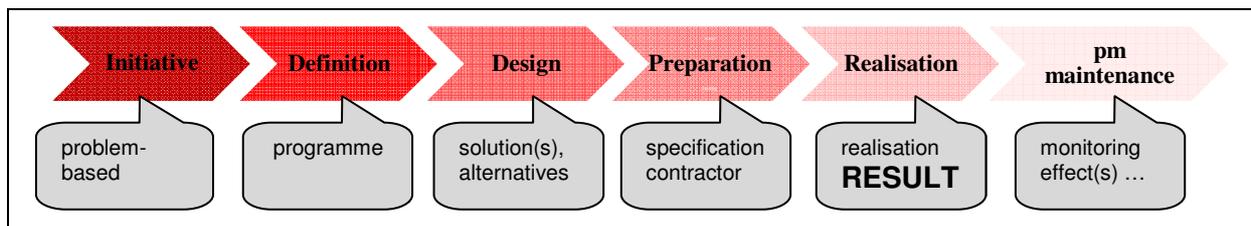


Fig. 3: Phases project-based development



Fig. 4 The pyramid builder (Kor, R. Werken aan projecten, R. Kor)

Given the nature of this case study only a fraction of the several dozens ready-to-use process-oriented instruments can be described briefly. Of course this doesn't do justice to their scientific background, their consistency and comprehensiveness –an apology is appropriate. Do note: some instruments are simple to handle, some tools need the assistance of experts to implement them properly.

8. Ready-to-use process-oriented tools

We start with (1) the Mutual Gains Approach (MGA) being the philosophical basis how to deal with the stakeholders and the cooperation/partnership between the stakeholders in a change process. We will move forward from there to the other tools: (2) Story-telling as a valuable component in really understanding each other, (3) Communication Skills as a prerequisite to make headway with the process, complemented with (4) the Colours of Change to get insight into the different ways of thinking (and acting) in processes of change, (5) Mediation Skills for those – inevitably- moments the process is brought to a boil, and (6) Belbin to check the balance in the team: is it adequately balanced to tackle the problems. Digital techniques (7) might be very convenient to accelerate the process of generating and prioritizing ideas and to create a certain amount of anonymity helpful in (the beginning of) the process so everybody involved gets his/her fair share in the brainstorm.

8.1. Mutual Gains Approach (MGA)²²

The aim of the Mutual Gains Approach is to look to maximise opportunities through consensus building between all the participants in a process. How? By focusing above all on the interests (needs) instead of the positions and by separating the people (stakeholders) from the problem (what's at stake). And in addition to invent options for mutual gain as it can make all the difference between deadlock, i.e. failure, or convergence of views, i.e. success.²³ Furthermore MGA takes care of an early dialogue in the process in order to detect right from the beginning the 'pain' in the proposals for a changing environment and to assure that all parties take their share and responsibility throughout the process (fig. 6).

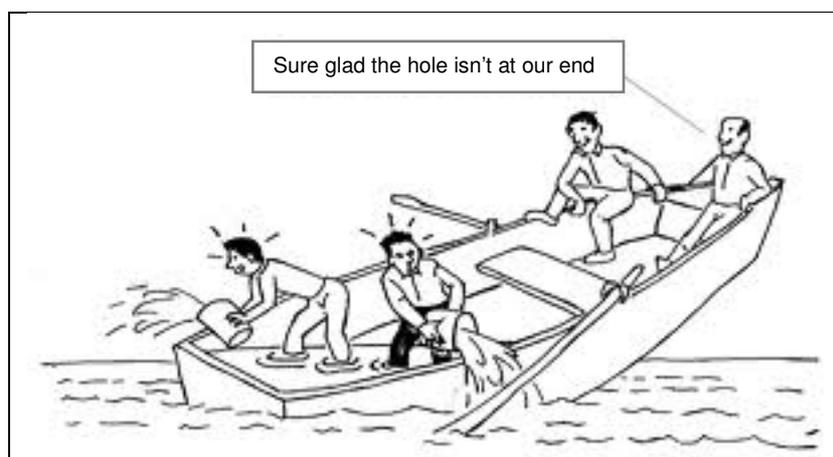


Fig. 6: You're More Connected Than You Think²⁴

The approach should not be mistaken for the Dutch 'polderen' or mediation.

MGA is running (operational) in many Dutch mega-projects difficult to handle due to complex techniques and/or bureaucratic government. It can accordingly be applied in complex situations with many and various stakeholders.

MGA's four steps are:

1. Analysing issues and stakeholders (instrument: matrix);
2. Bringing order in issues and stakeholders: which issues are outstanding, which need

- more attention (instrument e.g. participation ladder);
- 3. Dialogue with the parties involved: problems and possible solutions ('negotiations');
- 4. Monitoring the agreements, evaluation and communication in order to create sustainable relations (monitor).

Together they form the well known 'Plan-Do-Check-Act' circle (fig. 7). Its cyclical character guarantees continuous improvement.



Fig. 7

The method developed by advisors of Twynstra Gudde is very successful to structure a bulk of information and to keep it up-to-date. The instruments are helpful to assure the much needed transparency and reliability (key elements of MGA) towards the stakeholders and the decision-makers involved in the change process. However never underestimate how much effort is needed to arrange for the necessary preparations in order to enter a valid dialogue, nor how many effort is needed to keep the information relevant/up-to-date during the MGA process. It highly depends on the skills, ability and personality of the advisor (or urban planner) how effective the MGA process is.

8.2. Story-telling (cultural anthropology, social psychology)

Stories or narratives are being shared in every culture as a means of cultural preservation (history), to instil moral values (Bible, Qur'an, Torá), education and entertainment. Homer is a famous storyteller, so are the Aboriginals who navigate through the outback by their Tom-Tom-like 'song lines' and the Kung San, the Kalahari Bushmen (fig.8).

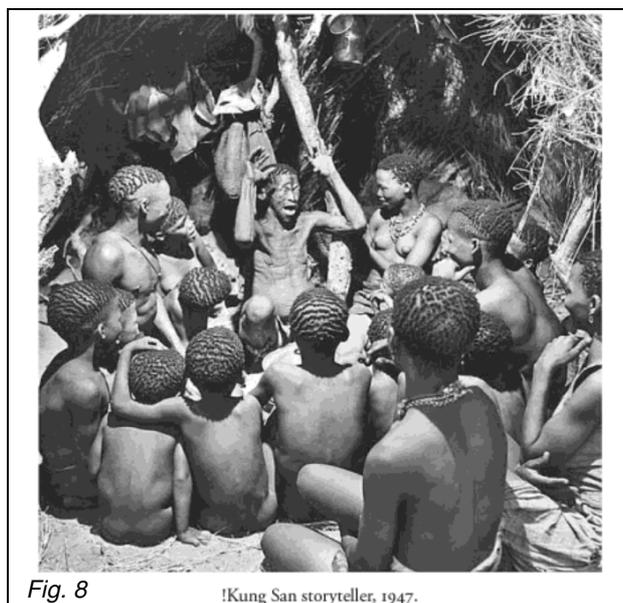


Fig. 8 !Kung San storyteller, 1947.

Modern-day storytelling can be applied as a stimulating intervention, as a means for sharing and interpreting experiences and possibilities of change and development. The local authorities might want to share their 'corporate' vision on the wanted development in a narrative way with the local residents using a metaphor - bold and imaginative like 'garden city' - or a vision (greater scope story). Local realities e.g. the stories and experiences of the residents and users, can be very informative as well as surprising and delightful –creating places that tell stories.

The planner assisting a group of residents would be well advised to invite them to discuss the *genius loci* of the place: its history, its identity, why they are proud of or devoted to the place ('meaning-making'), the people that were important, the impact of future development and what kind of development fits best. Knowledge and pride are a perfect basis for the development strategy. It is imagination creating a reality, using the narrative to interpret the past, shape the future and solve maybe existing or future problems.

Storytelling can also be a means to explicit ones personal or business-like dreams and longings –'I want a big family so I need a five bedroom house' or 'I want to give my hotel business a boost so I need room for extension'. It is then used as a bridge for knowledge and understanding of future projects and programmes.

Storytelling can also help in mediating conflicts and values (*viz. 8.3. Communication and 8.5. Mediation*).

8.3. Communication (*group behaviour, coalition planning*)

Civilians-civilians and civilians-authorities often have different views or speak a different language. That might create misunderstandings and irritation, even clashes -emotions can run very high. The tensions between both parties often arise from too little or no communication at all and a different view of roles, contribution and influence and of what is important for whom, what has to have priority etc. E.g. authorities often think and act in 'policies' (meta level), residents in terms of 'when do I get my permit so I can start to build my house' (micro level). The tensions might endanger the partnership or coalition and bring the position of the city planner in jeopardy.

In bottom up processes a good communication strategy is of utmost importance: who communicates when with whom and about what (do note the aspect of 'deliverance' [Belbin] and 'Rose of Leary'²⁵). Next: is the communication about decisions or about creating a wider support, the timing to implement measures, etc.

The experience shows that the irritation mostly regards (confusion over) the position of the parties involved: 'who is in power', the planning: 'too tight/loose time schedule', the communication (see above), the policy: 'too much policy/procedures, too little implementing/realisation', the finances: 'who pays what, how to share the profit', the organisation on both sides: 'separate, partly merged, point of contact etc.', and the decision making: 'who, when, what'.

In a partnership/coalition good communication is essential for:

- *mutual trust/confidence;*
- *partnership/respect/responsibility and prudence;*
- *win – win (mutual gain);*
- *preventing to be played off against one another.*

Don't forget the communication with the residents not directly involved in the change process. Do inform them on a regular base, create a wider support in order to avoid pressure from unexpected (and unwanted) 'action groups'.

8.4. Colours of change (*change management, action-learning-theories, characters of organisational life, X/Y- theory/ management and motivation, theory of human motivation etc.*)²⁶

Urban (re)development can be looked upon as a ‘change process’. People’s notion of change and how to get there varies. The way people express themselves talking about change and the words they use ‘betray’ their way of thinking and their preferences of the change process. Abstracting: some people believe change can be guided/induced best by general consensus and coalitions, others advocate to plan it in a SMART²⁷ way, some say that incentives and rewards are essential to bring about a process of change, others think change can best be dealt with in a (joint) learning action, others still say ‘let’s go with the flow’. Depending on the various notions five patterns (stereotypes) can be distinguished. Each stereotype is given a colour: yellow, blue, red green or white (fig. 9). Note that nobody is a 100% ‘red’ or ‘blue’ person, nevertheless everybody has a (dominating) mainstream colour –although it might change during one’s lifetime. Every colour has its strength, e.g. talents ... and its weaknesses (pitfalls).

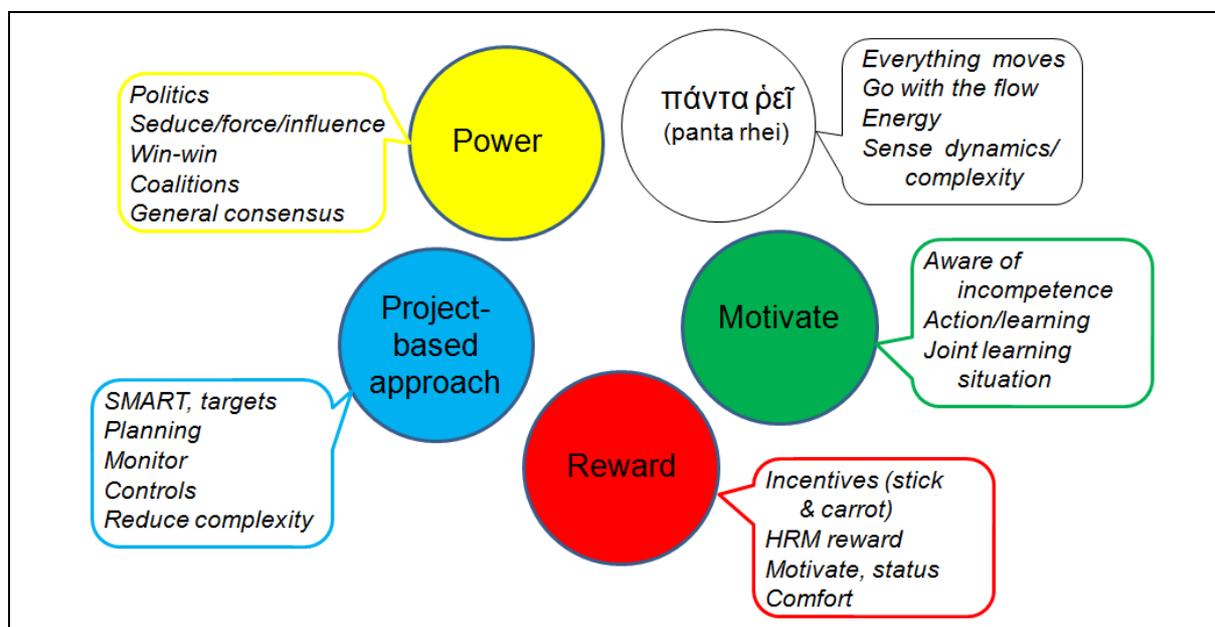


Fig. 9: Colours of change

An example: depending a person’s colour he/she describes the wanted ‘result’ of a change process at best as: a complicated game of power politics –this is obviously a yellow person; a blue person will say that the ‘result’ is clear and can be predicted, a red person can definitely outline the ‘result’ but can’t guarantee it, the green person will sketch it but neither can guarantee the outcome, and the white person won’t predict the result (it’s irrelevant) as ‘the present is important for the next step’.

There are some small tests available to give a person a first insight in his/her ‘colour’, i.e. how he/she thinks and acts in a change process. As in the Belbin test knowing your partner in a joint process might be convenient and speed the process.

The colour theory provides a tool to identify individuals, how they think, act and react in a group during the ongoing process of urban change ([re]development). His or her ‘colour’ also gives a cue how to respond/advise the person concerned. During negotiations every ‘colour’ needs its specific approach.

8.5. Mediation (*group behaviour, coalition planning*)

Talking about irritations (viz. 8.3. Communication): if tensions arise and the process risks to be brought to a boil the planner must asap consider two mediation-like steps:

1. Take stock of:
 - What is the irritation, why and where does it come from;
 - What is really behind the reproach and irritation ('the question behind the question')
 - What is going well and why.

This must be done by personal interviews.

2. Draw upon a mediation-trajectory:
 - Depersonalise/translate reproaches/irritations in notions of 'policy', 'organisation' etc.;
 - inform parties in a combined meeting about their reciprocal understandings and misunderstandings;
 - ask parties to discuss an agenda of 'how to continue the development' and 'how to share the tasks' the next 3 or 6 months.

Depending the situation the city planner can be the mediator, provided all parties trust him/her as a neutral person; sometimes (heavy case) it is better to appoint an independent mediator. If needed the mediation can be repeated several times; in a *light mediation* version it can be part of an iterated 'tuning of the reciprocal expectations for the next period'.

8.6. *Belbin (group behaviour/social psychology)*²⁸

Helping a group of citizens to help themselves get's easier when the participants know each other so they can rely on the other person's contribution and also better understand the 'deliverance' of that contribution. The Belbin Team Role Model is designed to use the talents and personalities of team members to their full potential (fig. 10) and to judge whether a team is sufficiently balanced to fulfill all necessary roles in the process. Filling in a simple questionnaire is enough to identify people's (behavioural) strength in the workplace and to bring the psychological diversity in the group in sharp focus. The nine Belbin roles are complementary, every role has its talent e.g. strengths (and weaknesses). Different roles in a group complete each other and the group thus achieves the maximum performance!

<i>Action Oriented Roles</i>	<i>Shaper</i>	<i>Challenges the team to improve</i>
	<i>Implementer</i>	<i>Puts ideas into action.</i>
	<i>Completer Finisher</i>	<i>Ensures thorough, timely completion</i>
<i>People Oriented Roles</i>	<i>Coordinator</i>	<i>Acts as a chairperson.</i>
	<i>Team Worker</i>	<i>Encourages cooperation</i>
	<i>Resource Investigator</i>	<i>Explores outside opportunities.</i>
<i>Thought Oriented Roles</i>	<i>Plant ('generator')</i>	<i>Presents new ideas and approaches</i>
	<i>Monitor-Evaluator</i>	<i>Analyzes the options</i>
	<i>Specialist</i>	<i>Provides specialized skills.</i>

Fig. 10: Belbin Roles

8.7. *Group Decision Room (GDR) (group behavior , action-learning-theories + ICT)*

A Group Decision Room supports the different steps of a problem solving or decision making process such as the generation of new ideas (brainstorming), the convergence of ideas, the organizing and structuring of ideas, the evaluation of ideas on different criteria, and consensus building. GDR is a digital technique that enables to assess the answers from all participants parallel and anonymous thus saving a considerable amount of time (app. 50%) giving the communication a boost. The anonymity supports a free exchange of thoughts and positive criticism, ideas are only valued on content, independent of who contributed them. In the Decision Room all participants have a computer connected to the central facilitators' one who assembles the (anonymous) information instantly, projects it on a screen for all to see and if necessary collates the data e.g. on priority and make the differences clear in order

to guide the discussion and eventually the voting. In this way a massive proportionate input is assembled in a very short time²⁹ to be discussed and if needed elaborated and/or voted upon in the next tranches.



Fig. 11

The GBR inspires, is effective (one day or half day suffices) and a great way of exchanging opinions, sharing positions and generating ideas and solutions. The GDR is also useful to create an overview of opinions and relations within a group which outcome can help to focus on the evaluation of a product or take stock of the guidelines for the future (consensus, strategic vision).

9. Step into the future!

To sum up: the heart of the matter is the expertise and ability of the urban planner to team up with citizens in the ultimate processes of public participation, i.e. the highest step(s) of the Arnstein ladder, and to create the context wherein real win-win situations won't be a dream. Engaging citizens and actively supporting them in their task requires new standards of planning education, above all process skills in order to be effective in the process of co-creation next to the well-known 'technical' urban toolkit – there can't be a bigger contrast. The gamma sciences like social psychology, sociology, change management etc. offer a wealth of ready-to-use instruments –the new toolkit of the city planner.

Notes, citations and resources

- ¹ Both Wilma van der Bruggen en Helena Chaja Heyning work for quite some time as ad-interim managers in many organisations, private as well as public, and are proficient in change management, organisational issues, etc.
- ² Clemens, S.L. (pen name Mark Twain) (1884), The Adventures of Huckleberry Finn.
- ³ ‘The Times They Are a-Changin’: a song written (1963) by Bob Dylan and released as the title track of his 1964 album. Dylan appears to have written the song as a deliberate attempt to create an anthem of change for the moment.
- ⁴ http://en.wikipedia.org/wiki/Kondratiev_wave
- ⁵ The notion of Dutch Big Society can be misinterpreted as the explanation of Dutch Big Society – or ‘Do-Democracy’ as it is called nowadays in Holland, is ambiguous. Some relate it to the UK Big Society (Blond, 2010; flagship policy idea of the 2010 UK Conservative Party general election manifesto), others focus strongly on the local social sector i.e. welfare system and social security (care, amenities, etc.). In the UK the concept Big Society has received criticism from all sides of the political spectrum (too much related to financial cuts, rhetoric) and in practice seems to have gone out of the window. Dutch politicians try to evade this criticism/negative connotation but can’t ignore that many people connect their message of self-help and self-reliance to the financial cuts and reduced budget expenditures due to the financial crisis.
- In the context of this case study we hold on to the international well known notion of ‘Big Society’ with the added important ‘Dutch’ in the sense of civic initiatives and involvement (residents as well as entrepreneurs) in both the local or regional social sector and other societal sectors like the economy, recreation etc. Citizens are not only involved when policymakers invite them to do so, but increasingly on their own initiative. The change-over to the Civic Economy is a small step.
- ⁷ Scientific Council for Government Policy (WRR), (2012), Vertrouwen in burgers. http://www.wrr.nl/fileadmin/en/publicaties/PDF-samenvattingen/Confidence_in_Citizens.pdf
- ⁸ Civic initiatives have a long history in The Netherlands. E.g. the very first housing corporations in the 19th century, the church from the Middle Ages on taking care of education (schools) and poor people (caritas). In the 20st century many of these initiatives were institutionalised and taken over by government –the much praised but nowadays unaffordable Dutch welfare state. Some of the tasks were marketed.
- ⁹ www.eowijers.nl
- ¹⁰ Gyro Gearloose is a figure in Donald Duck strips: the inventor (‘Archimedes’) or innovating nerd. In The Netherlands Gyro is called ‘Willie Wortel’.
- ¹¹ Dutch legislation to hand over the power and the budget to civilians, trusts etc. is not yet available (see e.g. UK’s public trust, right to challenge, right to bid); Government is rather reluctant (Doe-democratie [2013], page 57).

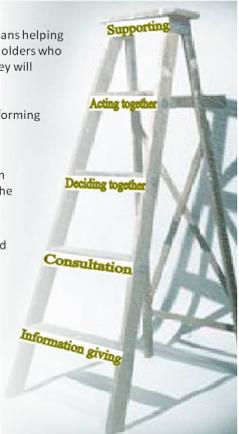


© Flyer Pakhuis



¹² Publication partners Nesta, Cabe, 00:/ (2011), Compendium of the civic economy.

- ¹³ ANV: Agrarische NatuurVereniging: Farmers Nature Association.
¹⁴ Developed by the Brazilian Instituto Socioeconômicos INESC.
¹⁵ In Belgium e.g. this is normal, in The Netherlands an exception.
¹⁶ Heyning, HCM & VanTilborg, WAM/Ruimtelink (2012) www.ruimtelink.com Burgers maken de buurt (Citizens take over: a new investment model for small-scale developments initiated by local landowners).
¹⁷ Note the positive effect of the High Line in Manhattan NY, a 100% private investment (and maintenance). One can see the unprecedented multiplier effect in the neighbouring districts: the regeneration of premises (apartments, lofts), new restaurants (economy), etc.
¹⁸ See also the role of the 'connector' in Confidence in Citizens (WRR).
¹⁹ Arnstein, SR (1969), A Ladder of Citizen Participation.

The ladder of participation															
<p>Supporting independent community-based initiatives means helping others develop and carry out their own plans. Resource-holders who promote this stance may, of course, put limits on what they will support.</p> <p>Acting together may involve short-term collaboration or forming more permanent partnerships with other interests.</p> <p>Deciding together is a difficult stance because it can mean giving people the power to choose without fully sharing the responsibility for carrying decisions through.</p> <p>Consultation is appropriate when you offer people limited choices on what you are going to do - but not the opportunity to develop their own ideas or participate in putting plans into action.</p> <p>Information-giving underpins all participation and may be appropriate on its own in some circumstances. However, you are likely to hit problems if all you offer is information and people expect more involvement.</p>	 <table border="0"> <tr> <td style="text-align: center;">PARTICIPATION</td> <td style="text-align: center;">GOVERNANCE</td> </tr> <tr> <td style="text-align: center;"><u>(Co)decision</u></td> <td style="text-align: center;"><u>Facilitate</u></td> </tr> <tr> <td style="text-align: center;"><u>Co-production</u></td> <td style="text-align: center;"><u>Co-production/delegation</u></td> </tr> <tr> <td style="text-align: center;"><u>Advise/council</u></td> <td style="text-align: center;"><u>Participation</u></td> </tr> <tr> <td style="text-align: center;"><u>Consult</u></td> <td style="text-align: center;"><u>Consult</u></td> </tr> <tr> <td style="text-align: center;"><u>Inform</u></td> <td style="text-align: center;"><u>Open autocratic</u></td> </tr> <tr> <td style="text-align: center;"><u>(No participation)</u></td> <td style="text-align: center;"><u>Closed autocratic</u></td> </tr> </table>	PARTICIPATION	GOVERNANCE	<u>(Co)decision</u>	<u>Facilitate</u>	<u>Co-production</u>	<u>Co-production/delegation</u>	<u>Advise/council</u>	<u>Participation</u>	<u>Consult</u>	<u>Consult</u>	<u>Inform</u>	<u>Open autocratic</u>	<u>(No participation)</u>	<u>Closed autocratic</u>
PARTICIPATION	GOVERNANCE														
<u>(Co)decision</u>	<u>Facilitate</u>														
<u>Co-production</u>	<u>Co-production/delegation</u>														
<u>Advise/council</u>	<u>Participation</u>														
<u>Consult</u>	<u>Consult</u>														
<u>Inform</u>	<u>Open autocratic</u>														
<u>(No participation)</u>	<u>Closed autocratic</u>														

- ²⁰ In the 'old/colonial' Community Development (sociology non-western countries Wageningen University & Research Centre) one always looked for the formal and informal leader as they were the key figures in civic involvement. The WRR discerns 'initiators' and 'connectors' (liaise between people and key contacts, e.g. group of people-policymakers or officials).
²¹ Marketing Triodos Bank (2012).
²² ©Twynstra Gudde (Amersfoort, The Netherlands) on the basis of Fisher, R & Ury, W. (MIT,1981), Getting to Yes; Susskind, L. (Harvard, MIT 1996), Dealing with an Angry Public; Myers,I & Briggs,K. (1964), Myers Briggs Type Indicator > Big Five; Leary, T. (Berkeley, Harvard, 1957), The Interpersonal Diagnosis of Personality > Rose of Leary; de Caluwé, L. , Vermaak H. (1999), Leren veranderen (Learning to change); Wijnen, G. & Kor, R.(1996), Het managen van unieke opgaven (Managing unique projects and programmes); Wijnen, G. et al. (1998), Projectmatig werken (Project-based working).
²³ R & Ury, W. (MIT,1981), Getting to Yes.
²⁴ Senge P. (1994) The Fifth Discipline: Fieldbook 'Systems Thinking'.
²⁵ Leary, T. (Berkeley, Harvard, 1957) Leary developed a model to allow relationships between people to be mapped: the so-called 'Leary's Rose'. This model can be helpful in obtaining a greater insight into relationship levels.
²⁶ Caluwé, L. de; Vermaak, H. (1999), Leren veranderen (Learning to change).
²⁷ SMART: abbreviation of **S**pecific, **M**easurable, **A**ceptable, **R**ealistic, **T**ime[constrained]; much used in the project-based approach.
²⁸ Belbin, R.M. (1981), Management Teams
²⁹ For that reason the GBR is also called SpeedRoom (©Twynstra Gudde, Netherlands).

Collaborative Planning: An Evolving Model Of Practice *Phil HEYWOOD, Queensland University of Technology, Australia*

Abstract.

New models of planning are needed that can incorporate the expanding capacities of rapidly developing global communications and social media. Universal internet access and the instantaneous responses of social media combine to expand the bounds of communities, bringing previously separate groups and activities into immediate contact and potential conflict. Both opportunities and demands for collaboration are consequently being dramatically expanded and beneficial change is becoming increasingly dependent on establishing sensitive links between formerly independent fields. Three of these fields of particular interest to planners are explored: they are community development, economic sectors, and scales of governance. Because consensus and mutual understanding within and between them is essential, collaboration becomes both a necessary method and a valuable outcome in the planning of settlements and their major activities.

Collaborative methods within the planning of the major activities of housing, public space and natural environment have been selected to illustrate examples and achievements of good developing practice. Some methods of collaboration are common to all activities: they include comprehensive and innovative consultation; inclusive objective setting; exploratory action research; multiple criteria policy formulation & evaluation; and composite, participatory implementation (Heywood, 2011). This paper considers these techniques by making reference to international and local Brisbane examples of collaborative successes in each of the fields of housing, public space, and natural environment.

The paper concludes that collaboration is already spreading widely to transform brittle and narrow structures of command and control. Cooperative methods can be extended to recognise not only the need for sustainable relations of mutual care and concern among different groups of people, but also the inter-dependence of species and habitats (Midgley, 2006).

Conference delegates may choose to visit some of the local examples cited in the paper themselves if they are staying in Brisbane for a few days after the Congress: South Bank Gardens provide one interesting example adjacent to the conference venue and the Norman Creek Common and conservation corridor at Stones Corner is also within ten minutes travel by Brisbane's excellent Eastern Busway.

CONTEMPORARY CHALLENGES OF CHANGE

Traditional collaborative practices are often so embedded in institutions like churches, madrasahs, universities and cultural associations promoting music and dance, that we tend to take them for granted. Now that the extent and pace of change is challenging the boundaries of human control, conscious collaboration becomes essential. Simultaneous and mounting volatility is affecting physical, social and political climates (Stiglitz, 2002; Flannery, 2010, Vidal 2012) and may result in instability akin to the "Punctuated Equilibrium" which Stephen Jay Gould (1988) identified as a defining feature of geological time. If not well managed, such sudden and interacting events as those, which marked the end of the Carboniferous era, could create conditions as fatal for today's species as those earlier ones were for the dinosaurs. Collaboration therefore assumes great survival value.

Jarred Diamond (2005) has recently argued that such social collaboration, combined with scientific inquiry and intellectual honesty, is required if societies are to manage such threatening changes. In the last two millennia, numerous societies failed and collapsed

through lack of these essentials, including medieval Greenland Vikings facing rapid cooling, Mayan and Anasazi Indians confronted by disease and drought, Easter Island Polynesians destroying their own woodlands to help construct massive monuments to propitiate their gods. The competitive deforestation of ancient Greece, a civilisation that demonstrates the height of competitive individualism, may have also contributed to its trading, economic and ultimate military decline.

Contemporary societies face a similar combination of such challenges. Steep physical rises in atmospheric carbon levels generate rapid rises in climatic volatility and sea levels. The economic and political effects of the collapse of soviet communism coincide with the implosion of capitalism's competitive self-regulation to threaten international economic chaos. Increased risk-taking resulting from the depletion of fossil fuel sources threatens environmental disasters in the Gulfs of Mexico and Benin and the North American Prairies. Meanwhile, the communication revolution is rapidly replacing hierarchical control of global information systems by networks of six billion cell phones. In the face of these challenges, Diamond's proposals to combine scientific inquiry and social cooperation appear very convincing and suggest that collaboration is now even more essential to sustainability and to survival than it was in Neolithic or Medieval times.

THREE ARENAS OF COLLABORATION.

In order to illustrate the roles that collaborative planning needs to play to manage and maintain our current "freedom in a rocking boat" (Vickers, 1972), it is possible to identify three arenas where the activity already plays significant roles- those of community development, economic sectors and institutional governance.

Community development, involving individuals and groups

Collaboration makes possible pleasures of contact and sociability whereas isolated life renders individuals psychologically and physically vulnerable. At the simplest level, mutual grooming removes infestations and promotes feelings of reciprocity. More complex behaviours such as grand parenting and "allomothering" or nurturing the young of relatives or neighbours apply altruism within and between families to bestow both material and psychological benefits bridging and bonding generations, genders and family groups (Hrady, 2009). Team sports teach collaboration and channel conflict to mirror, and train participants for, such social activities as the communal hunt and teamwork for such activities as constructing and maintaining irrigation and drainage systems and securing the communal harvest. By such means, we also learn to manage combative but productive group meetings, whether in Homer's *Odyssey* or the modern boardroom.

Examples of such interpersonal and community collaboration include the flourishing traditions of street parties, urban farms and neighbourhood networks, which enrich civic life throughout the contemporary world. They are equally evident in the Hindu Puja festivals of India, the social activities of Highline Park of New York and the inner city urban farms of London (Heywood, 2011: 11, 214). The instantaneous and convenient links provided by the Internet enhance, rather than supplant people's initiation of, and engagement in, local life. Virtual reality empowers rather than replaces personal contact and comradeship.

Collaboration among economic sectors

The great advantages of collaboration between the three interdependent sectors of government, business and social enterprises are increasingly being recognised -explicitly or implicitly - in the western and developing worlds, and to some extent in Russia and China. "Third way" politics have been associated with the rise of community planning throughout the EU and in particular in the UK, and in Australia's Economic Stimulus program of 2007-2010, which saw almost equal roles taken by each of the three sectors. The extensive National

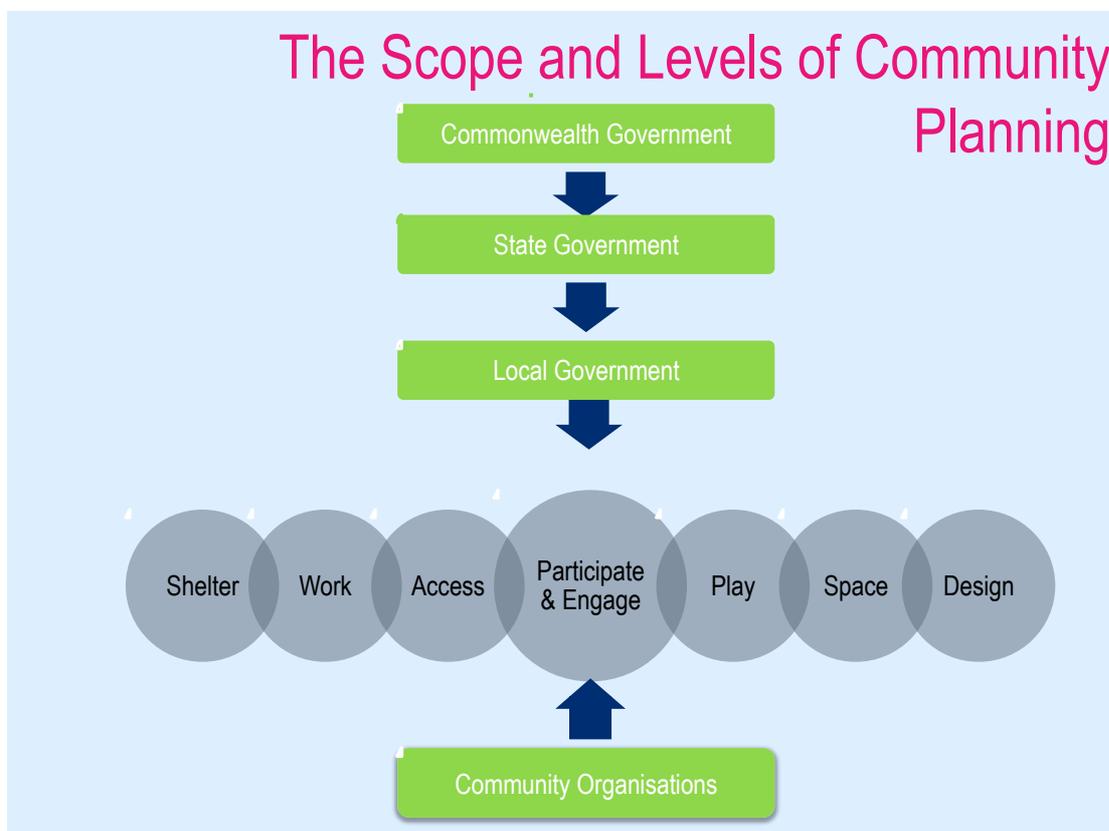
Housing Affordability Fund (HAF) and National Rent Affordability scheme (NRAS), for instance, were taken up primarily by the Not for Profit sector, while national and state governments invested heavily in infrastructure, including school grounds and buildings and broadband communications; and the private sector concentrated on investment in the mining boom, which also contributed to the maintenance of full employment and consumer confidence (Commonwealth Government, Department of Families, Housing, Community Services and Indigenous Affairs (FAHCSIA), 2012). The health of national, as much as that of local and regional, life depends upon such energetic collaboration.

Collaboration in Institutional Governance

Finally, collaboration among and between different levels of governance is essential in a contracting world whose links are daily demonstrated by instantaneous and virtually free communications. The spreading impacts of technological power require adjacent local governments to cooperate in their regulation. Global markets and direct foreign investment compound these environmental impacts, spreading them across out-dated boundaries.

Equally imperative is the need for collaboration among at least six levels of governance in the contemporary world - local, urban/district, metropolitan/ regional, national, supra national and global. In the course of a single day each one of us is likely to encounter strong impacts from many of these levels- neighbourly contact and recreation in the local park, public transport provided or regulated by the city council, travel to work in a regional location, impacts of national benefits and controls, purchase of goods produced in an international free trade or regional economic cooperation area, and the enjoyment of health, work or environmental standards produced and guaranteed by such global organisations as the UN, the World Health or International Labour Organisation.

Figure 3 The Scope and Levels of Community Planning in Australia



Source: Heywood, 2011

In these circumstances, traditions of sturdy independence have been developed into opportunities for collaboration not only across boundaries but also among differing levels of community. A community activist's membership of an international NGO may open a window onto the planning of her local environment, which ultimately gives rise to the designation of a new regional or national park. In the contemporary cyber world we can flit between scales and collaborate with many people whom we shall never meet.

FIELDS OF COOPERATION

Organised activities among practitioners and specialists.

Although collaboration may often start at the most local level of working with one's neighbours, the need soon emerges for links between different specialists concerned with managing activities as diverse as housing, resource management, production, transport, learning, health and play. Categorising human activities into such specialisms to promote economies of scale and support mass production and consumption, may also result in segregated and soul-less places with impoverished community life. Having so recently had too few plans; we now have too many unrelated ones. In order to retain responsive integrated communities supporting rich human experiences, we need to promote routine collaboration among such practitioners and experts as demographers; housing providers; economic, transport and environmental planners; and community development practitioners. Integrated and synoptic Community Plans based on agreement on overall political goals and priorities should frame and precede detailed operational plans for such activities. Within this framework, sectoral plans can then highlight how each activity will support each other's objectives and contributions. Nowhere are the virtues of such collaboration more significant than in the four fields of human shelter; communal spaces; community life; and natural environments. In each of these, effective programs depend on collective action.

Human shelter.

Safe, secure and accessible shelter forms a major part of the fabric of human settlements, generally occupying more third of their total area (Kaiser, Godschalk and Chapin, 1995: 341). It is also crucial to the development of health, learning and productive skills, and these roles combine to make the form, quality and location of housing a major interest of both urban and national governments. They have often been motivated to regulate and prescribe housing rights and enact restrictions that prevent individuals and families from providing their own shelter, where they need it, and using whatever materials they can afford (Thoreau, 2000; Cullingworth, 2006; Turner, 1976). This has two implications: because governments who call the tune should expect to pay the piper, they need to ensure that all their citizens are provided with access to decent and affordable housing; the second is that people need to be involved consultatively and collaboratively in the provision and design of the dwellings and residential areas which will intimately and decisively shape their lives and those of their children and dependents.

Large scale public provision of housing by governments, voluntary agencies and social enterprises intended to meet these needs has often deteriorated into standardised and stigmatised public housing ghettos and sink estates giving rise to demands for more responsive and collaborative forms of delivery (Heywood, 2011). No less than a tenth of all British housing is now provided by Housing Associations funded by the Housing Corporation (now part of the Homes and Communities Agency). In Sweden such bodies provide almost half of all housing and they are also significant providers in France. Until recently they were less significant in Australia; only the South Australian Housing Trust (now Housing South Australia) played a leading role in mid twentieth century planning and provision of dwellings and residential areas, being responsible for a little more than 10% of all accommodation in the state, including the two new towns of Elizabeth and Noarlunga (Marsden, 1986), and

later sharing as a collaborative partner with the commercial developers Delfin in the successful mixed public /private development of Golden Grove, in north east Adelaide.

This collaborative approach linking different sectors and levels of government has recently been applied within 2009- 2013 Commonwealth Government Economic Stimulus package. The Commonwealth Government's \$6 billion National Rent Affordability Scheme (NRAS) and \$500 million Housing Affordability Fund guaranteed start up grants and tax reductions for business and social enterprise providers who agreed to produce suitable housing at levels up to 25% below market rates and levels (Commonwealth of Australia, 2012). Initially, this program was mainly taken up by social enterprise organisations such as Canberra Community Housing in the ACT and the Brisbane, Gold Coast and other Housing Companies in Queensland, but the response to Round 4 applications in 2011 indicates that the business sector is now taking up a substantial proportion of the 20,000 approvals, especially in NSW and Victoria.

Initially the Brisbane Housing Company saw itself as collaborating laterally with governments, professional practitioners and market investors, intending to avoid housing management and involvement with tenants, purchasers or local residents. However experience of provision and need soon drew them into these fields, including extensive tenant consultation and collaboration with the residents and advocates of their award winning apartment blocks and mixed housing estates. If it was experience which generated the establishment of their Tenant Participation Service, it was collaborative links with government departments, community associations and professional colleagues which give rise to such interesting schemes as the Columba Street conversion of an old school block on Richlands High School site in the south western suburb of Inala for 26 affordable rental dwellings, each with small front and back gardens. The simple act of devolving governments responsibilities for affordable housing does not solve the problem of standardised housing and stigmatised estates: that requires the application of collaborative planning and management of the sort which BHC is now practicing.



Figures 4 & 5: Back and Front views of Columba Street conversions of Richlands High School teaching block with small front and back gardens, Brisbane Housing Company



Figures 6 & 7, Attached dwellings Earnshaw Terrace and Barbara and George, residents, Brisbane Housing Company

These issues are at their most acute where housing conditions are most severe, in the overcrowded, under-serviced and legally insecure slum housing and spontaneous settlements that make up a sizeable proportion of the total housing stock in many of the most rapidly growing cities of South Asia, South America and Africa. The first response of central governments is often to plan to clear the squatter's shacks with the intention of relocating them elsewhere, irrespective of the social and economic networks, which are needed to sustain the family and social lives of their occupants. Motivations may vary from preparing the way for modernisation and urban development as in Lima, Rangoon and parts of Mumbai, through intentions to modernise the city's housing stock in Singapore and parts of Seoul, Manila and Rio de Janeiro, to simply creating free space for land speculation as is current happening in Phnom Penh (Australian Broadcasting Commission, 2012).

A more collaborative approach can avoid these conflictual and socially destructive approaches. The deeply entrenched desire of humans to provide and shape their own shelters- going back at least 400,000 years to the wicker work shelters of the Homo Erectus builders of the structures of Terra Amata on the slopes above the modern city of Nice - can be supported rather than repressed (Leakey,1981:123-5). The public sector can concentrate on the necessarily public goods of sewerage; water and power supply and guaranteed public rights of access. The collaborative improvement of over 100,000 of such locally constructed and often spontaneous dwellings in the bustees of inner Kolkata in the nineteen eighties demonstrated natural advantages of working with local residents rather than against them in ways advocated a decade earlier for Peru by John Turner (1976). In Kolkata the Metropolitan Development Authority, using World Bank funds, confined itself to sewerage the slums and providing connections to a huge new treatment plant in the Bay of Bengal, introducing good surfacing and street lighting for the existing network of urban pathways and stimulating the local economy by investing in locally produced drain pipes and sanitary ware (Heywood 1986).



Figure

8. Puja Festival of renewal and cleansing in a Bustee area of inner Kolkata after introduction of public services improvement program.

Figure 9. Inner city water space during Puja festival in Kolkata following removal of sewage by installation of metropolitan waste treatment plant

By comparison, the current crony capitalism that is driving inner city dwellers from one temporary refuge to another in Phnom Penh, using armed police to clear protesters and escort bulldozers is neither socially productive nor politically acceptable (Australian Broadcasting Commission, 2012). In such situations, collaboration should outbid and outlast coercion.

Communal Spaces

Welcoming and sociable public spaces are also hallmarks of healthy societies, allowing people to gather to discuss their hopes and concerns and to celebrate their senses of place and belonging. Italian piazzas, like Siena's Campo and Venice's St Mark's Square, English squares, village greens and town commons and Buddhist stupas and surrounding assembly areas, like that at Boddhnath in Kathmandu all fulfil these functions.



Figures 10 & 11, The Campo in Siena, Site of the annual Palio horse race between Contrade, showing the Palazzo Pubblico and the many engaging open air cafes and restaurants which bring together residents tourists and local entertainers and performers. Photos by author

They both express and generate possibilities of further collaboration, as in the Agora and Stoa of classical Athens, where Socrates stumped around 2.400 years ago, challenging the youth of the city to question the nature of truth and the meaning of citizenship. Further east, one can dine in the open air in Florence's Piazza della Signoria, under the ever-youthful gaze of Michelangelo's David and the safely severed head of Benvenuto Cellini's Medusa. The mix of architecture, art, food and travel still promotes collaboration within and between Tuscan cities, as it does in Brisbane's Post Office Square, depicted below in Figure 13



Figure 12, Lunchtime in the Piazza Signore in Florence, with Michelangelo's *David* and Pitti Palace. Photos by author

Figure 13. Lunchtime in Brisbane's Post Office Square showing happy collaboration of uses, spaces, scales, times and styles. Photos by author

Another example is provided by Brisbane 's Southbank Gardens. Originally slated for totally privatised and commercial redevelopment after the closing of the Bicentennial Expo, they have instead been developed as a metropolitan focus of play, pleasure, exercise, weekend markets and public access. This resulted from collaboration among the three professions of architecture, landscape architecture and planning and between city politicians and community activists in the face of a lucrative fait accompli announced by state politicians (Heywood 1995).



**Figures 14, 15 & 16, Brisbane, South bank 1983, awaiting redevelopment for the Bicentennial Expo; unused space; auto repair industries and riverside concrete plant
Photos by author**



Figures 17,18 & 19, The Revised South Bank Development Plan, 1991, the new Southbank Beach and a performing artist entertaining visitors, next to the Bougainvillea Walk. Photos by author

New Zealand's system of Marae - designated open spaces dedicated to Maori cultural purposes - protect them from development and reserve their control for the Iwi or Maori governance body; they offer a fertile example for other countries of a good way to link planning controls to community collaboration and cultural and public space conservation (New Zealand Government, 1991). Community gardens and urban farms can perform similar though less symbolic roles in drawing people together and providing much needed respite from the intensity of urban life. Without collaboration neither Marae not community gardens would long survive, but the remarkable flowering of the latter throughout the great cities of the contemporary world indicates how highly valued are their contributions to urban life. There is no better expression of the role of physical development in prompting social cooperation than these reclaimed urban spaces. Hilary Peters, the moving spirit behind the establishment of Surrey Docks Urban Farm in southeast London writes of "the dreadful alienation of people in the abandoned docks that wasn't just the result of unemployment. They were alienated from themselves, each other and their surroundings." Now the small two hectares farm is a focus for community activists, local craftspeople, human resource development programs, long distance walkers and cyclists and people of all ages looking for worthwhile activities (Peters, 2009; Heywood 2011:11)

Enriching as such re-naturalised spaces are, the great designed set pieces and their modern successors in street malls and city squares remain the classical magnets for social life and collaboration as they have been for over 2,000 years. They need a balance of public, commercial and community activities. Where designed or re-designed without collaboration, as in the recent refashioning of Brisbane's venerable King George's Square with hard surfaces, unsympathetic materials, and intrusive commercial functions breaking up the symmetry of the classical old spaces, they can lose all capacity to delight or even detain their users. Nearby another long established urban space in Post Office Square continues to provides exactly the embracing open textured and welcoming space that the city needs to promote contact and a sense of ownership of the city.



Figures 20 and 21. Brisbane's King George's Square, undergoing reconstruction and resurfacing with a minimum of public consultation and the unwelcoming outcome, contrasted with the sociable space of the nearby Post Office Square. Photos by author

Community Life

Festivals and artistic activities are potent sources of the collaborative stimuli that go to produce the social and cultural capital to bond, bridge and link people to each other and underwrite the social and economic success of the city (Putnam, 1993). Festivals perform amazingly diverse roles, spanning the social inclusion of minority groups and the commercial promotion of culture, tourism and creative industries (Landry, 2008). At one end of the spectrum international Expos and sporting competitions can transform the land uses, self image and tourist trade of great cities like London, Seoul and Sydney while at the other they can bring together fragmented communities needing to recover a sense of self worth. Street parties, too, are a form of festival, as are the parties in the park that are increasingly common in metropolitan suburbs.

Performing skills play a major role in the building of social and cultural capital. Putnam's definitive study of the roles of social capital in the regional development of Northern Italy, *Making Democracy Work* (1993), focussed on choral and other such communal activities as traditional pageantry and folk dancing, and showed how these correlated with mutual trust and capacity to work together even when national and regional politics produced volatile and unstable leadership. Later in the 1990s, Cooke and Morgan (1998) showed that one of Putnam core regions of Emilia Romagna was a European leader in developing an associational economy using strong bonds of contact and trust to link extensive networks of small producers into energetically productive chains. These proved capable of responding rapidly to changing conditions in global markets (in this case in the production of high fashion knitwear) resulting in unusual economic resilience in a decade of uncertainty and contraction

Similar systems of formation of social capital are at work in Australia. Brisbane's month-long annual *Music Fest* every October brings groups of school children from over 500 schools, totalling more than 20,000 participants from all parts and school systems of Queensland and draws in others from Northern New South Wales and the Australian Capital Territory. The Fest, which builds creatively on long standing traditions of regional Eisteddfods, includes choral, orchestral, string, piano and jazz competitions, and has done so for over 30 years. Performances occupy three separate venues running in parallel for 5- 10 hours every day, and involve children from both state and independent systems (Houghton, 2012, pers. com.) It is clear that this extraordinary feat of collaboration between the business, state and community sectors (the Fest was started by the Australian Academy of Music and is now actually run by the commercial Prestige Music Ltd who produce sheet music for schools) is proof against cyclical cut backs in government expenditure on the arts. Participation of teachers is uncontroversially supported out of leave and travel entitlements; and the young people who are competing are financed by their parents and from within their communities. Accommodation in Brisbane is in cheap hotels, back packers and with friends and relations. It is clear that this remarkable annual festival is a rich source of bonding within schools and among the members of their orchestras and bands; that it builds bridges between different

communities and educational sectors who meet each year in Brisbane; and that it links local aspiring young musicians with members of the musical establishment who act as MCs and adjudicators.

Collaboration and cultural development go hand in hand. The Aboriginal Dance troupe of Yuli Burri Bah on Minjerribah (North Stradbroke Island) for instance, conserve and enact the cultural traditions of the Quandamooka peoples at the same time that they maintain their personal fitness and build both bonding and bridging links with each other and with visiting tourist groups from all parts of Australia and worldwide. On an even wider stage, the Tjapukai dance troupe of the Kuranda area of the Barron River uplands of North Queensland now tour the world and reap a rich harvest of acclaim and professional self-respect. Singing, dancing, painting drawing, and designing are all activities that can be powerful vehicles for collaboration. It is also significant that there are several instances where courts of law have confirmed Native Title rights on the basis of songs and dances that traditional owners have preserved to record associations with that country. The courts are leading public opinion in recognising the significance of creative collaboration

Natural environments are the most ancient and perhaps the most widely embraced and acknowledged arenas for collaboration. The preservation of universal rights of access to river banks and woodlands is enshrined in the Common Laws of England which stipulate that as long as public rights of way are traversed once a year they must remain open to all. It was on this basis that throughout the 1930s Tom Stephenson and his associates in the Ramblers Association broke down fences erected across customary paths in England's Peak District and southern Pennines, facing and embracing imprisonment by local landowning magistrates and challenging the courts to defy egalitarian legal traditions. One of the most significant planning acts of UK's Post War Labour government was to establish in 1949 a National Parks Commission (now "Natural England"), responsible for running ten large National Parks in collaboration with County Planning departments with a total extent of nearly 10% of the country's total land area (Cullingworth, 2006; Natural England, 2012) and an even larger proportion in Wales and Scotland. These national parks are designed not only to ensure public access, but also to safeguard natural species and habitats in Areas of Outstanding Natural Beauty (AONBs). They also include a number of much loved long distance footpaths, the first of which, the 256 mile Pennine way, was officially opened by Tom Stephenson in 1965.

Similar collaborative protection of valuable and vulnerable habitats and species is practiced by Australian Aboriginal communities with their setting aside of "Poison Lands" and use of totems to protect vulnerable species like koalas, wombats and even possums. Scientific champions of the spirit of "Gaya" the Greek goddess of nature like James Lovelock (1979), Rupert Sheldrake (1990) and Tim Flannery (2010) extend the idea of the collaboration beyond cooperation for the protection of nature to embrace belief in a deep seated harmony among species which is necessary to maintain the health of the global ecosystem we all share.

Recognition of this kind of reciprocal responsibility leads environmentalists to seek to safeguard important natural features in both rural and urban areas. The Yorkshire Wildlife Trust (YWT) in England, for instance, assists landowners to maintain woodlands and farm buildings in good condition and runs camps to introduce young people to conservation activities and a better understanding of natural environments. The YWT simultaneously protect and present moor, valley and woodland environments. In urban areas in many countries local conservation groups who oppose the destruction of critical creek corridors to make way for new roads and residential developments also collaborate to maintain their health by weekend working bees. In Greater Brisbane, for instance, there are now eleven such groups cooperating in the Brisbane Catchments Network with two local governments

and three other collaborative associations to promote regional scale creek corridor conservation (Brisbane Catchments Network, 2012).

Over the last twenty years, this network has grown rapidly from the pioneering work of such local groups as the N4C (Norman Creek Catchment Coordinating Committee). In the 1980s N4C had joined with other Community groups to protect the short but significant Norman Creek valley from massive industrial and road development (Heywood, 2011). As the City Council found it stage by stage forced to adopt the community's alternative recreational and conservation strategies, they moved into a partnership with N4C and with other such groups, now extending to embrace eight creek corridor conservation groups who are consulted, informed and supported by the council.



Figures 23 and 24, Working Bee along Norman Creek & Imagining the Future of the Norman Creek Catchment (Brisbane City Council 2012)

Similar situations were earlier developed and applied in the USA's northwestern corner where the State of Oregon enshrined riparian rights of conservation and access in its trail blazing 1974 Land Use Act. Five of Oregon's legally binding 19 State-wide Planning Goals, dealing with natural resources of air, land, water, estuaries, coasts, beaches and the Willamette waterway protect and guarantee access to the state's water courses and coastal spaces, and provide an example to other jurisdictions in America and worldwide (State of Oregon, 2012) .

Collaboration is also beginning to supplant competition in the management of the extensive coastal and offshore ocean habitats of the world's largest island of Australia, where many fish, bird and mammal populations are threatened with devastation and in some cases extinction by competitive over fishing and careless conduct of trawlers and tankers. In November 2012, scientists and activists combined to achieve the promise of the world's largest array of marine reserve, when the Commonwealth Government announced the establishment of 40 new reserves adding more than 2.3 million square kilometres to Australia's marine reserve estate (Australian Government, 2012) . This will result in a total area of 3.1 million square kilometres of ocean being managed primarily for biodiversity conservation, fulfilling the Australian Government's part in the creation of a new national system.

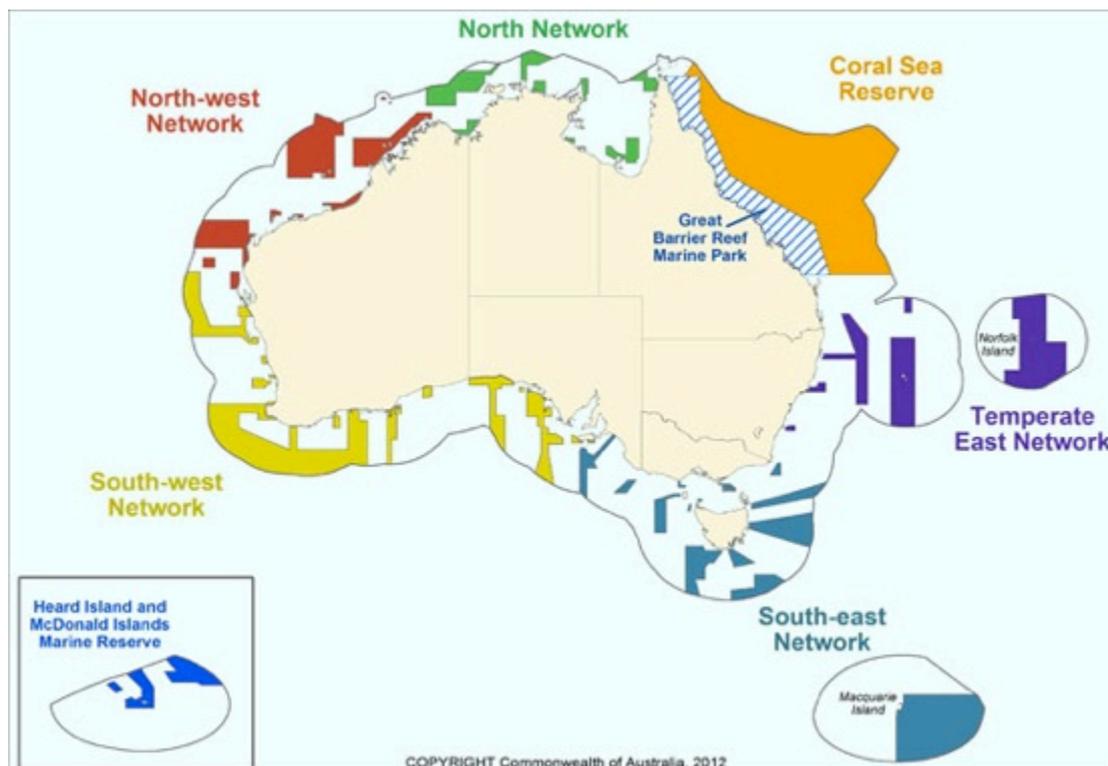


Figure 22. Australia's New Network of Marine Reserves

Conclusions

In conclusion, it is now possible to identify the strong patterns of association and collaboration within and among the three arenas of community development, economy and governance in each of the four selected fields of housing, public space, community life and natural environment, and these are summarised in Table 1 below

Table 1 Arenas and selected activities of Collaborative Planning

Planning Arena	Shelter	Public space	Community Life	Natural Environment
Sphere of concern				
Community Development	Tenants Associations. Housing Coops. Housing mix policies.	Urban Farms, Shows Fairs & Exhibitions. Public spaces like Brisbane's South Bank Gardens	Community Festivals. Performances & exhibitions of music, drama, culture & sport	Creek Catchment Coordinating Committees. Communal spaces like Norman Creek Common
Economic Sectors (Public, Private, Commercial and Community)	Government investment & infrastructure support Brisbane Housing Company's mixed investment streams and	Public Squares. Commercial and Community Craft and Farmers Markets. Community Gardens	Economic Associations & networks/ Creative arts industries Cultural tourism Mentoring &	Ramblers Associations & National Park Associations. Nature England Environmental Protection Agencies.

	tenures		sponsorships	Envt. tourism
Governance (Global, Continental, National, Regional, Urban, Local, Commercial and Voluntary)	Building Standards and Planning provisions Commercial Master Planned Communities Housing Associations and Trust Developments.	National Parks Civic Squares Neighbourhood Parks Private, school and community sports fields Commercial halls and fitness clubs	Residents & Tenants Associations. Delegated powers and partnerships. Land & Watercare. Wildlife Trusts & Funds. Custodianship of Country	Creek Catchment Conservation committees World Wildlife Fund and Wildlife Trusts Societies for the Prevention of Cruelty to Animals. World Heritage Listings of UN & ICOMOS

An interesting aspect of these welcome links is the role collaboration is playing not only as part of the *process* of planning, but also as one of its motivating *goals*. If other widely adopted goals such as prosperity, choice, justice and sustainability are to be pursued and achieved, then there will inevitable conflicts that will arise between aspects of each which can best be managed by acknowledging the importance of collaboration as a value in its own right. Such collaboration should ultimately extend not only within and between communities, but also extend to our relations with other species to help nurture a sustainable world where people consciously aim to live in harmony with each other and with the rest of the global habitat.

These aims no longer appear utopian- they run a greater danger of being regarded as conventional wisdom. Nevertheless, it is essential to recognise that their widespread acceptance would prove to be a great advantage to all. Collaboration can spread like groundwater, percolating upwards and sideways to irrigate and transform brittle structures of command and control. Cooperative swarms and ecologies of mixed uses can replace rigid zones based on promotion of competing activities. Street gardens and creek corridors can transform regimented open space provisions. As the Internet and mobile phones combine to reduce the scale of the contemporary world, collaboration has become simultaneously easier and more effective; Planners have nothing to lose but their chains of command. And we stand to gain a world of initiative, energy and harmony.

Afterword

Congress delegates may choose to visit some of these local examples themselves if they are staying in Brisbane for a few days after the congress: South Bank Gardens provide one interesting example adjacent to the Conference venue; the Norman Creek Common and conservation corridor at Stone Corner is also within ten minutes travel by Brisbane's excellent South Eastern Busway.

REFERENCES

- Australian Broadcasting Commission (2012). "Cambodia: We will not be moved" *Foreign Correspondent*, ABC1, November 27, 2012
- Australian Government, Department of Sustainability, Environment, Water, Population and Communities (2012) *Commonwealth Marine Reserves*, (2012)
<http://www.environment.gov.au/marinereserves/index.html>, Accessed 28/11/2012
- Brisbane Catchments Network (2012) *A Regional Voice for Brisbane's waterways*
<http://www.brisbanecatchments.net.au/A> Accessed November 30, 2012.
- Brisbane City Council, (2012) *Norman Creek 2026 Vision Statement & Concept Plan*, Brisbane, Author.

- Commonwealth Government, Department of Families, Housing, Community Services and Indigenous Affairs (FAHCSIA), 2012, <http://www.fahcsia.gov.au/our-responsibilities/housing-support/programs-services/national-rental-affordability-scheme/national-rental-affordability-section-round-4-outcomes>, accessed November 29, 2012.
- Cooke, P. & Morgan, K. (1998) *The Associational Economy*, Oxford, Oxford University press.
- Cullingworth, J (2006) *Town & Country Planning in England and Wales*, (14th edition) London, Routledge.
- Diamond, J. (2005) *Collapse, How nations choose to survive or fail*, London, Penguin.
- Flannery, T. (2010) *Here on Earth, an Argument for Hope*, Sydney, Text Publishing.
- Florida, R. (2005) *Cities and the Creative Class*, New York, Routledge.
- Gould, S.J. (1988), *Times Arrow, Times Cycle*, London, Pelican.
- Healey, P. (2006) *Collaborative Planning*, London Macmillan Palgrave
- Heywood P. (1986) *Felda and Bustee*, QUT, unpublished paper, Brisbane QUT
- Heywood P. (1995) "The Social Context of Tourism" *Landscape Australia*
- Heywood P. (2011) *Community Planning, Integrating social and physical environments*, Chichester, Wiley
- Houghton R. (2012) Pers. Com. Rod Houghton has for 20 years acted as Master of Ceremonies for this major festival of young musicianship.
- Hrady, S. (2009) *Mothers and Others, the Evolutionary Origin of Mutual Understanding*, Cambridge, Mass, Harvard University Press
- Leakey, R. (1981) *The Making of Mankind*, London, Abacus.
- Lansing, J, (1996) *Priests and Programmers: Technology of power in the engineered landscape of Bali*, New York, Princeton University Press.
- Lovelock. (1979) *Gaia, A New Look at Life on Earth*, Oxford, OUP
- Marsden, S (2000) *Business, Charity and Sentiment, The South Australian Housing Trust, 1936-1986*, Adelaide, Wakefield Press.
- Midgley, M (2006) *Science and Poetry*, London, Routledge Classics
- Natural England (2012) "National Parks, Britain's Breathing Spaces"
<http://www.nationalparks.gov.uk/aboutus>, Accessed Dec 6, 2012
- New Zealand Government, (1991) *Resource Management Act*, Wellington, Author.
- Peters, H. (2009) *Surrey Docks Farm: Agriculture in the City*, [http, // sovereignty.org.uk](http://sovereignty.org.uk). features accessed 1 June 2009.
- Porter, M. (2000) "Location, Competition, and Economic Development: Local Clusters in a Global Economy" *Harvard Economic Development Quarterly*, vol. 14, no.1, pp. 15-34.
- Putnam R (with Leonardi R and Nanetti, R), *Making Democracy Work*, (1993) Chichester, Princeton University Press
- Richardson, H (1969) *of Regional Economics*, Harmondsworth, Penguin.
- Sheldrake, R (1990) *The Rebirth of Nature, The Greening of Science and God*, London, Routledge.
- State of Oregon Department of Land Conservation & Development, *Statewide Planning Goals*, <http://www.oregon.gov/lcd/pages/goals.aspx>, accessed 28.12.12
- Stiglitz, J. (2002) *Globalisation and its Discontents*, London, Penguin.
- Thoreau, H. (2000) *Walden or Life in the Woods and Other Writings*, Westminster, MD, Modern library
- Turner, J. (1976) *Housing By People: Towards Autonomy in Building Environments*, London, Boyars
- Vickers, G. (1972) *Freedom in a Rocking Boat: changing values in an unstable society*, Harmondsworth, Penguin
- Vidal. J. (2012) "Abnormal weather has now become the new normal " *Guardian Weekly*" 188 No 2:30.

Societal Paradigm Shift and Community

KARAKIEWICZ JUSTYNA University of Melbourne, Australia

1 Introduction

Thomas Kuhn (1970) observed that science does not progress linearly through a gradual extension of knowledge within one framework; his proposition was a progression through periodic revolutionary upheavals which he called paradigm shifts. He suggested that the discovery of irreconcilable shortcomings in an established framework produces a crisis that may lead to overturning the paradigm and ushering in a new one. Revolutions are never an easy experience and most of us prefer to engage in evolution, where changes happen gradually, often unnoticed, and no-one is unsettled.

Sometimes, revolutions are needed. For years now, we have been responding to the discovery of the profoundly disturbing evolutionary consequences of climate change. It is clear that collective behavioural change is needed, yet little has changed in popular behaviours. Many of us have been made efforts to be more sustainable. Some of us have forgone our cars for bicycles, some installed photovoltaic panels, most now sort our waste for recycling; however, all of this together has a relatively small impact on our environment and we recognise that we need to do something more substantive and soon. But how do we identify substantive actions that will bring the larger public to embrace such change and result in a societal paradigm shift?

The change must start with a gripping idea. We must find inspirational ideas that allow us to dream about better future and not be paralysed by doom and gloom. Renzo Piano noted in an interview with Peter Buchanan:

What architecture and planning suffer from is a desperate lack of imagination. We need to think about more alternatives and where we might be going, and of new paradigms. We have all sorts of possibilities open to us, and we don't have the imagination to conceive of and use them. What we need now is brainstorm and dream: to stop trashing the world we need culture that is more deeply satisfying. [...] There's terrible dearth of real imagination in thinking about the environment. Most ideas are not exciting. And we are not going to stop people trashing the world unless they are exciting about the alternative. That's the problem. People are not dreaming up sufficiently exciting alternatives." (Piano, 2001 pp 71-72)

Profound societal change *has* happened in recent history. At the beginning of the twentieth century, when the effects of the Industrial Revolution were choking cities and the solution was identified of encouraging people to move out of cities, into the new idea of suburbs, London Underground came up with series of posters advertising all the advantages of suburban life. Ebenezer Howard's Hampstead Garden Suburb offered people the luxury of dreaming about better futures away from pollution of the industrial city. Railways offered a means to move easily back and forth from suburb to workplace. Yet the public had to be introduced to the idea and convinced of its benefit. This was not easy at all. The railway lines and the areas around them were not places associated with dreams or desires. Most of the population saw them as evil distractions, bringing pollution and degradation.

Advertising too was not perceived positively. While we might use advertising today to sell an idea, then advertising was novel and considered vulgar and distracting. It was far from easy, therefore, to sell the idea of something that was unknown and untested. Howard idea's proposition ran counter to many prejudices and preconceptions about city and rural life, about railways, including stations and lines, and about advertising itself. Ultimately, though, it was advertising that made Garden Cities an object of desire.

2 Advertising

Advertising can be defined as a form of communication, primarily used today for marketing purposes. The word comes from Latin *ad vertere*, which means, “to turn the mind towards”. Advertising persuades, manipulates and drives consumer behavior, or ideological beliefs and can be broadly categorized into two types: commercial and non commercial, where commercial advertising will be focused on increasing of consumption of advertised product or services, and non commercial advertising could include promotion of a point of view by political parties, religious organizations, or driving changes towards more sustainable living.

Advertising existed long before the Industrial Revolution. While commercial messages and records of political campaigns have been found in the ruins of Pompeii, it is generally agreed that first formal advertising started together with first newspapers. The first newspaper advertisements began in France in the early seventeenth century. Theophraste Renaudot, Louis XIII's official physician, placed notices offering jobs and goods for sale on the office notice board on Ile de la Cite, but in order to promote these notices to the bigger audience, he create La Gazette, in 1631, which became the first French newspaper. However there was no real need for advertising goods since all goods were hand made and sellers knew each other personally. Packaging and branding were unknown and unnecessary. The Industrial Revolution broke the personal links between seller and buyer, mass production required mass consumption. Manufacturers then needed to explain their new products to their new customers. Competition between different manufacturers introduced brand loyalty and thus branding. It was not good enough to promote a new product, you need to make sure that customers will understand the difference between your product and product offered by your competitor. The same applied to the selling of a “better life quality” in suburban houses. Cheap labor, cheap land prices, and cheap materials, made it possible to create cheaper housing on the periphery. Cheaper housing became another commodity that needed to be sold and therefore to be advertised.

This paper looks at successes and failures of advertising of housing and identifies the factors that motivate people to aspire towards types of residential accommodation, examining the role of communications in persuading people of the benefits of sustainable living.

We suggest that the campaign to sell the idea of suburban living, as exemplified by Ebenezer Howard's Garden City movement, is one of the most successful advertising campaigns of the twentieth century. The idea remains today an “the object of desire”. Yet, we know today that Ebenezer's ideas need to be rethought and adapted to the twenty first century. This form of suburban living cannot be considered sustainable, but neither is the high-rise tower. Therefore the question that we need now to ask is what alternative we can offer to allow people to dream again but now to dream about sustainable living?

To do this requires an understanding of current impediments to sustainable living. While we are aware that many people have positive attitudes towards the environment, these are rarely translated into behavioural change. This is often attributed to the lack of information, and choice for consumers in sustainable living alternatives. Indeed we are not short of ideas, but we are unsuccessful at communicating them to achieve broad public commitment. It is these exciting alternatives that this paper will try to identify and work to communicate.

3 How Garden Cities Became “Objects of Desire”

The Industrial Revolution made cities as desirable places to be. People were eager to move from rural areas to the city because life outside the city was seen as worse. Poverty, hunger and lack of employment or social mobility encouraged significant numbers to move to the city. This is the same scenario observed today in Asia and Africa where urban populations are growing significantly. In many cases there was no choice, the city offered the only possibility to survive. But life in the city was far from being desirable. As early as the 18 century William Hogarth portrayed London's city life in “Gin Lane and “Beer Lane”. Where the

latter depicts a happy and prosperous community, nourished by the native English Beer, the evils of consumption of foreign gin in the former is seem to lead to starvation, decay, madness and suicide. But the prosperity of Beer Lane, which thrived on the consequences of industry, is the cause of misery found in Gin Lane (Fig.1).



Figure 1: Beer Lane by William Hogarth, 1751

The allegory applies to all industrial cities; their wealth and expansion had significant social consequences. The Charles Dickens provides clear descriptions in “Oliver Twist” (1838), and “Hard Times” (1854). In Oliver twist we find this powerful description of life in London during the Industrial Revolution:

“So they established the rule that all poor people should have the alternative (for they would compel nobody, not they) of being starved by a gradual process in the house, or by a quick one out of it. With this view, they contracted with the waterworks to lay on an unlimited supply of water, and with a corn-factor to supply periodically small quantities of oatmeal, and issued three meals of thin gruel a day, with an onion twice a week and half a roll on Sundays. They made a great many other wise and humane regulations . . . kindly undertook to divorce poor married people . . . instead of compelling a man to support his family, as they had theretofore done, took his family away from him, and made him a bachelor! There is no saying how many applicants for relief, under these last two heads, might have started up in all classes of society, if it had not been coupled with the workhouse; but the board were long-headed men, and had provided for this difficulty. The relief was inseparable from the workhouse and the gruel, and that frightened people.” (Dickens, 1838)

“Hard Times” (1854), set in a mythical Coketown, can be identified with Manchester or Preston, and illustrates the dangers of allowing humans to become like machines, suggesting that without compassion and imagination, life would be unbearable.

Nevertheless, new technologies of the time were thought to hold solutions to social problems. The provision of infrastructure, such as sewage, electricity and gas, offered hope of a better future. Misery could be suffered if there was hope for a better future and better quality of life. Although the Victorian city of slums was polluted, overcrowded, and unhealthy, it offered social and economic opportunities to the poorest. Most had escaped rural areas and unemployment in search of opportunities offered in industrial cities. For these, Howard’s

vision of a peaceful life in the country site did not have much appeal; the countryside was not full of promise of clean air, nature, and peace, it was rather wrought by economic depression, without work and wages, and with inadequate social life, it was a place to be avoided, not desired.

3.1 *The opportunity*

Ebenezer's idea was also premised on new technologies and infrastructures and, although the infrastructure enabled city expansion, sprawl and commuting, Howard's ideas looked beyond that. He was promoting was a sustainable way of life not in the suburbs but in discrete and separate Garden Cities. Garden Cities consisted of short distances, employment, entertainment and a range of services accessible by foot. The railway allowed for easy access to a nearby city center and other Garden Cities, but commuters were always pedestrians at both ends of their journey. The land surrounding Garden Cities feed the inhabitants and provided the employment. These principles are recognized today as those of sustainable communities. These principles included return to the community of any land value increases. All residents would pay a modest rate-rent for their accommodation, factories or farms. The rate-rent was calculated to be sufficient enough to repay interest on money originally borrowed. As debt was reduced, more of the income was directed to support community needs and to provide welfare, where needed. Howard's ideas were not as much concerned with physical planning as they were focused on reconstruction of capitalist society into co-operative commonwealths. Howard was more interested in social processes than physical forms of development. These rural communities were conceived to address urban sprawl by creating self-sufficient developments interconnected and connected to big metropolis. In 1884 the economist Alfred Marshall interpreted Ebenezer's ideas:

The general plan would be for a committee, whether specifically formed for the purpose or not, to interest themselves in formation of colony in some place well beyond the range of London smoke. After seeing their way to buying or building suitable cottages there, they would enter into communication with some of the employees of low-wages labor" (Marshall, 1884, p.224)

Eight month after the book was published, in June 1899, the garden City Association was established. At first it was a small group of six friends, which included Alexander Payne, Treasurer of Land Nationalization Society. The aim of the society was to promote Howard's ideas, and to set in motion plans to create the first Garden City. Letchworth, and later Welwyn, demonstrated the practical application of principles described in Ebenezer Howard's "Garden cities of To-morrow". Letchworth was built in the area of severely depressed agriculture land, 34 miles away from London. Howard's idea was to create a garden city with population of no more than 32,000, living on 1,000 acres of land and surrounded by further 5,000 acres of land designated to farms and urban institutions such as reformatories, convalesces homes, hospitals, etc, which could benefit from such settings. If the number of residents reached the limit of 32,000, another city will be created near by and connect to it.

In practice what Ebenezer Howard was proposing was a formation of a trust to purchase and maintain on behalf of the community the land and the buildings. The freehold was to be retained by the trust in order to make sure that community would be able to enjoy benefits resulting from increase in land value and rental values. All of this required capital sufficient enough to be able to purchase the land and buildings. The first Garden City Company was established and registered on 1st September 1903. It took the company over a year to raise 148, 000 Pound Sterling towards the cost of site purchase. The company needed to wait until 1912 for its first profit. Although Letchworth was initially designed to accommodate 32,000 inhabitants, only 1,000 moved in in the first two years. First inhabitants were mostly middle class idealists and artists. It proved difficult to attract industry to the area; nearly ten years passed before the first industry, a printing and binding works, provided employment.

3.2 The challenge

The promise in Letchworth was a better quality of life, better accommodation away from overcrowding, congestion, noise and pollution. It offered life closer to nature and it offered opportunities for people to get out of landlord tenant relationships and being able to become owners of their own homes. Nevertheless it was still extremely hard to attract people to move to garden cities. By assumption, life outside the city was the sub-urban, that is, not as good as urban/ Memories of the poverty and hardship of the life in the countryside and therefore, the idea of rural life was something to be avoided by all costs.

Beyond this initial assumption, however, there were problems associated with railways. Railway for the very long time was being seen as destructive element, not only to the urban structure and the countryside but also as destruction of communities, social structures and culture.

Without any doubt the railway was the most profound transformative innovation of the Industrial Revolution in the 19th century. Some believe that the

“...railway tracks marked the divide between old, rural, small-town, slow-moving Britain and the modern industrial nation of great towns and cities, factories, and constant rapid travel and communication” (Harrington, 1877)

But railway lines also destroyed the stability, the tradition and permanence, of the British countryside and replace it with uncertainty, based on innovation and a transience of life. Nothing like that was seen before and nothing caused the same degree of disturbance and disruption. Installing the infrastructure involved the demolition of neighborhoods and communities through land acquisition. In the 1860s, railway development started to have a significant impact on the pattern of development in cities. Railways needed large areas of space for tracks, stations and storage. The railway tracks often divided old neighborhoods and reduced access across the line caused congestion in places where access was provided. It also caused severe congestions around the stations.

In 1861, railways employed around 23,000 people and by 1891 this figure was almost 70,000. In addition to this, another 48,000 people were employed in ancillary transport industries. If one adds to it families and dependents the total number of people benefiting and depending on railways could have been as much as 250,000. But although there were obvious benefits from railways developments there were also endless problems associated with it.

The terminal station buildings were very imposing and located at the beginning at the edge of the city. They housed hotels, restaurants and other services related to the station and although they provided luxury, they were also surrounded by rundown and undesirable development. This was a consequence of the railway's dependence on steam engines, rendering areas around stations and tracks sooty from the engine emissions and the location of frequent fires from burning embers. Therefore the poorest population often inhabited the land around stations and railways tracks.

At the same time, housing prices in London kept increasing. Most of the population lived in rental accommodation without control. Constant population increases and a lack of inexpensive housing generated demand for affordable housing outside London. New transport infrastructure facilitated the trend but perceptions of the undesirability of land adjacent to the infrastructure strengthened. Dickens captures progression in “Dombey and Son”, published in 1848, only 18 years later, after the first railway construction has begun in London. He describes the construction of the railway through Camden Town and portrays the railway as a transforming force, able to provoke dramatic changes, even improvement but, in the process, creating significant disruption and depravation. Thousands of people were evicted or made homeless; 37,000 people were displaced in London between 1859 and 1867, the period of railway boom; through this, railway construction contributed greatly to increased overcrowding, poverty and misery. John Ruskin also portrays railway as a new

barbarian invasion, destroying the great-civilized European culture. In 1849 he wrote about the destruction of European cities:

“...the railroad and the iron wheel have done their work, and characters of Venice, Florence, and Rouen are yielding day by day to lifeless extension of those of Paris and Birmingham” (Ruskin, 1849)

With the undesirable proximity to rails, the arches and viaducts of railway lines attracted the poorest and the most venerable in society. Alcoholics, prostitutes, criminals, and homeless were drawn to these areas and railway lines and arches became symbol of human degradation. Ruskin observed, in 1876, of the *“... deterioration of moral character in the inhabitants of every district penetrated by railway” (Ruskin, 1876)*

This perception was widely held. In George Eliot’s “Middlemarch”, we find a description of the alarm and anxiety of residents of the town when the construction of the railway lines begins.

“...woman both young and old regarded travelling by steam as presumptuous and dangerous” (Eliot, 1870)

3.3 The role of advertising

The difference between those in the trains traversing the arches and those resident below was symbolic and perhaps contributed to the perception of railways as desirable way of transport to escape squalor. Proximity to railway lines and stations was to be avoided and rural life had only recently been left behind. How then could the promoters lure people into suburbs in adequate numbers?

It is therefore not surprising that the railway companies were fighting for survival and that the first proposal by Howard for Letchworth Garden City was not a great success initially. The railway companies promoting these new suburban or exurban life styles were driven to try something new, to employ an advertising campaign to promote their product and products associated with it, but advertising itself was a novel and not broadly accepted medium Gissing (1894) describes King’s Cross underground station polluted by advertisements.

“...the visual hubbub, which they create acting as an appropriate counterpart to the noise of trains and people, which fills the station, and echoing the chaos and turmoil of the city streets above.”

His description continues, describing the station not as progress but rather as regression to an era of formless chaos:

“...high and low, on every available yard of wall, advertisements clamored to the eye: theatres, journals, soaps, medicines, concerts, furniture, wines, prayer-meetings-all the produce and refuse of civilization announced in staring letters, in daubed effigies, base, paltry, grotesque. A battle-ground of advertisements, fitly chosen amid the subterranean din and reek; symbol to the gaze of relentless warfare, which ceases not, night and day, in the world above”. (Gissing, 1894)

The most famous advert in this campaign for suburban lifestyles comes from 1908 and depicts Golders Green (Fig.2). The artist of the poster is unknown, but the poster was published by the Underground Electric Company Ltd, and printed by Johnson Riddle and Company. The poster represents the aspirations of an alternative life, with people taking walks along tree lined roads, a family enjoying the tranquility of nature in the back garden, with the wife looking after children, relaxing in the deckchair while engaged in domestic reward by mending clothing. In the distance, we can see a railway station and, beyond, the smoke of the city (“the big smoke”). The label underneath aptly promotes: “A Place of Delightful Prospects”.



Figure 2: Golders Green, Underground Electric Railways Company, 1908

Middle classes saw this image, and many of us still do, as an advertisement for a Garden City but this poster, as many others in the campaign, was promoting not a Garden City but a Garden Suburb, borrowing from the efforts of Howard to define a new urban paradigm. It was part of a railway advertising campaign to encourage regular, daily rail usage, but it was not the railway that this campaign was promoting. If you look carefully at the image, you can see the railway station, but the station was not central to this message. The underground rail company was selling a dream, not a service, by encouraging people to dream about a better quality of life previously only accessible to the upper classes.

The campaign worked well; home owners and renters soon started to move to the suburbs in significant numbers. Slowly, the fear of the railways was dissipated and replaced with a form of snobbery. Those on the train were those who could afford it, secure in their employment and, not harnessed to unreasonable employers, blessed with the time to spend on the train travelling along ever longer railway lines. With industrialization, salaries increased, the working day became shorter and spare funds made available to purchase the cheaper products of industrialization.

The impact of railways was extensive. Family lives were scheduled according to train timetables. The gender division was reinforced. Railway stations and train carriages became the domain of suburban male; women stayed in secure houses with gates and walls, protected from the evil of the city centers. Owning a house with a garden had three symbolic values: it could have been seen as a miniature of country house, as a homestead or smallholding, or as a domestic sanctuary in the Garden of Eden. All these were previously available only to the upper classes. Until 1880s, commuting was available only to people who could afford horse-drawn carriages, later, horse-drawn omnibuses and second homes in villas outside the city. The affluent had houses and cottages in the country to which they could retreat on weekends, when on holiday or in retirement. To the newly created middle class, the idea of living a portion of an upper class life style was desirable and therefore powerful advertising technique.

3.4 *The villa redux*

Railway lines and underground produced posters promoting the speed and efficiency of the train, comparing them with walking speed, speed of horse-drawn carriage or omnibus. Efficiency was succinctly illustrated in a poster from 1912 where egg timers showed how

much time commuters saved on a single journey and how much in one week. Other posters communicated the investment made in the interests of the commuters: "What does it takes to move one passenger: 234,000 tons of coal, 71,000 of oil, 10,000 of staff, 6,000 tons of steel and iron, 200 tons of tickets, 184,000 Pound Sterling of taxes". At the bottom of the poster, a short sentence has been added: "306, 000 000 travelled in 1923". Other posters promoted travelling during off peak hours and on Sundays: "Book to Perivale, Sudbury or Harrow, for field, path, rambles in old fashioned country". Garden suburbs were advertised in posters promoting "health of the country and comforts of the town". Slogans such as: "Sunshine is the Brightest where it Falls on Your Own House", or "380 feet above the Thames, therefore out of valley fogs", lured people into the suburbs. The paradise could be found d at the outer edge of the city where the air was clean and healthy lives awaited people away from polluted slums, away from overcrowding, and socially undesirable environments.

The posters portrayed idyllic life in the suburbs and productive employment in the city. In support of this, they guaranteed rail passengers service at least during peak hours cheap fares and "special train services on Sunday". Perhaps off message, one poster from 1915 is particularly disturbing: "why bother about German invading the country? Invade it yourself by underground or motor bus". Advertising used all messages to encourage people to move out of the city to their own paradise on earth.

In the London Transport Museum, we can find 27 posters advertising Golders Green. Some project images of a natural landscape and parks, an idyllic life with children relaxing by the water. Others deploy plans to show the extent of the greenery. There also pictures advertising low cost of tickets and ease of access to events and activities that take place in the area. There is even a poster suggesting time can be saved when travel by train. None of the other 26 posters had the same impact as that of the villa in a garden. The dream was sold not by the nature, peaceful life, time or money saved on public transport that attracted people to the suburbs, but the possibility to dream of a better life, one approximating life of the upper class.

Look again at the poster for Golders Green above, the most successful and often repeated of the images, for closer inspection is revealing. The paradise villa, apparently in the Garden of Eden, is nothing but a typical semi-detached house, the typology very popular in the British Isles but nowhere else in the world. Showing only half of the semi-detached house implied that you would be living in detached villa surrounded by garden. A scaled down version of a manor house in the countryside, this was a perfect image to persuade new middle class that the villas in the countryside were no longer accessible only to the upper classes; they could be affordable for many. Something that previously was impossible dream could now become reality, but it could only become reality with the development of railways.

There was a clear class distinction implicit in the dwelling type and therefore it was not surprising that, when depicting ideal living, the artist of the Golders Green poster has chosen not to show the other half of the structure. The ideal house with the ideal family is carefully depicted as implicitly living in a detached dwelling. While the fiscal reality was a need to share a party wall, the aspiration was of isolation.

3.5 *Paradise tarnished*

The stations and the train became proxy social centers for suburban males. The value of the traditional city was presented as depleted, even problematic, and needed to be exchange for new values now promoted by railways companies as a way to enable people to increase their quality of life, by separating work from domestic life, bread winners from home makers, children from busy streets of cities into secure backyards. The isolation of women inside the home and away from full participation in the society was seen by many as stabilization of society as the whole (Beecher, 1849). Suburbs for a long time were associated predominantly with the middle class but, over time, allowed for a distancing between the upper middle class and the lower middle class with their own suburbs. Places like Surbiton, Ealing or Sidcup were at the top of the social order. In these suburbs the roads were lined

with trees and houses had substantial gardens. Lower middle classes were located in suburbs such as Bowes Park, Palmers Green, Wood Green, or New Southgate. All were safely distant from the city-locked working classes.

Whether upper middle or lower middle class, suburbs shared characteristics of isolation, difficult access to services, schools, hospitals, or even basic provision of shops or more local employment, although the promise of paradise dominated the message. Not everyone was lured by the suburbs. Early on, alternative views were presented of life in the suburbs such as by Arnold Bennett in "Hilda Lessways" (1911) where Hilda offered the following description of her journey from Central London to suburban "paradise" of Hornsey:

"...the train almost empty, waited forlornly in forlorn and empty part of the huge, resounding ochreish station. Then, without warning or signal, it slipped off, as though casually towards an undetermined goal. Often it ran level with the roofs of vague, far stretching acres of houses-houses vile and frowsy, and smoking like pyres in the dank air. And always it travelled on a platform of brick arches. Now and then the walled road received a tributary that rounded subtly into it, and this tributary could be seen curving away, on innumerable brick arches, through chimneypots, and losing itself in a dim horizon of gloom. At intervals a large, lifeless station brought the train to a halt for a moment, and the march was resumed. A clock on the station said a quarter to two." (Quoted in Railways and Victorian Imagination, Bennett, 2004)



Figure 3: Golders Green interpretation, 2013

This book presciently describes the emerging truth of suburban sprawl as manifested in the monotonous landscape seen from the railway. As the middle classes were escaping from inner suburbs in search of better quality of life, the poorer population was moving in to areas left over. New suburbs did not really deliver that which they promised. Stations were deserted except during rush hours. The passage reiterates the dictate of the train schedule in the life of the suburb, governed by the clock. But if the life in the suburbs in 1911 could have already showed some reason to be concerned, the real problem came evident in the late 1930s. Private car ownership in 1919 in England was 109,000; the majority of the population still used public transport to commute and the majority of housing in suburbs was located within walking distance to the station. By 1939, car ownership had increased to 2,000,000 and the location of suburban housing was freed from the constraints of public transportation. With the move to commuting by car came a new set of challenges. but the promise of a "paradise" in suburbia continued to be promoted. Created on the principles and promises of

Garden Cities, Garden Suburbs and suburban living transformed into a reality that has little to do with sustainable living and the aspirations of the Garden City movement.

With this understanding, the question posed here is whether we can once again run an advertising campaign for sustainability as successful as the one that promoted Golders Green.

4 Advertising objects of desire

Today advertising once again has a bad name. Sustainability advertising has taken a turn to promote a message by scaring us, painting terrifying or unsettling futures. The message is one of a pervasive gloom. Polar bears are losing their habitat, the desert is encroaching many of our cities, the water level is rising, aquifers are falling, and some of our cities are going to disappear under water. All in all, there is very little to make us happy today, little to help us imagine a better quality of life. We are so scared that we cannot be scared any more by messages portraying yet another disaster.

Sustainability has lost its image as an object of desire. Recalling the strategy of the Underground Electric Company in 1908, we need a message that calls us to a sense of purpose and hope in taking action. It is time for something new, innovated, exciting and very desirable, an object of desire of “sustainable living”.

References:

- Bennett, Arnold (1911) *Hilda Lessways*, London: E P Dutton
- Dickens, Charles (1838, 2002) *Oliver Twist*, New York: Dover Publications
- Dickens, Charles (1848) *Dealing with the Firm of Dombey and Son*, Wholesale, Retail and for Exploration, London: Bradbury and Evans
- Dickens, Charles (1954) *Hard Times*, London: Bradbury and Evans
- Eliot, George (1874, 2008) *Middlemarch*, New York: Oxford University Press
- Freeman, Michael (1999) *Railways and Victorian Imagination*, New York: Yale University Press
- Gissing, George (1894) *The Immoral Dickens*, Montana: Kessinger Publishing
- Howard, Ebenezer (1902, 1946) *Garden cities of To-morrow*, London: Faber and Faber
- Kuhn, T. S. 1970. *The structure of scientific revolutions*, Chicago, University of Chicago.
- Marshall, Alfred (1884, 1925) “Where to house the London poor” *Contemporary Review*, pp.142-151
- Ruskin, John (1849) *The Seven Lamps of Architecture*, John Wiley and Sons

Integrating community Participation in Urban Redevelopment Projects: The case of Makongo in Dar es Salaam Tanzania

Joseph Paulo LAYSON, Tongji University, China

Prof Xia Nankai, Tongji University, China

1. Introduction

Many studies have been done about urban planning, but there are no studies done looking at the opportunities and challenges of implementing community initiated urban redevelopment projects. Time and again, development projects initiated by dominant “outsiders” have failed to translate “insiders’ expectations” into equitable, enduring, and sustainable benefits (Bae, 2006). ‘Community’ is a notoriously slippery concept and carries with it a variety of connotations (Cochrane, 2003). It may be conceived as groups of people defined by geography, identity or interest, or even viewed as an aspirational model.

Community participation is a proven approach to addressing urban environmental issues and has been long utilized in various development projects in Tanzania internationally. Thus bottom up approach and community involvement in improving housing and living condition has been a best alternative. Community participation has been rarely discussed, however, in the context of urban regeneration.

However, the quality of participation varies from project to project. Moreover, in spite of the failure of many urban planning programs designed *without* the participation of target communities, some professionals continue to question the value of community members' participating in program design, implementation, and evaluation.

This research brings highlights and suggestions on how to overcome these challenges and use the opportunities for development. This study explores the opportunities and challenges in implementing community initiated urban Development Projects. Many government and nongovernmental development projects and programs put much emphasis on community involvement in development processes (Wema, 2010). These efforts are due to a belief that participatory planning can help development planners and policy makers address community needs and sustainable development.

This paper therefore, critically examines the application of the concept of community participation in the urban redevelopment process in Makongo juu and Tianzifang in Shanghai China. Comparative achievements are given; problems faced examined and possible solutions are put forward. Challenges and opportunities for replication in similar environments are discussed. Preliminary findings revealed that willingness of residents to release part of their plots for improving public infrastructure has made the projects successful.

1.1 Research Objectives

1.1.1 General Objective

The overall research objective was to explore opportunities and challenges in implementing community initiated urban redevelopment projects.

1.1.2 Specific Objectives

1. To identify opportunities in implementing community initiated urban redevelopment projects
2. To identify Challenges in implementing community initiated urban redevelopment projects
3. To recommend the best implementation strategies for community initiated urban redevelopment projects

1.2 Significance of the study

The need for this study came from ongoing remedial efforts of improving environmental challenges to meet Millennium Development Goals (MDGs) in 2015. More over Challenges facing local government in providing public infrastructure and service made a turning to the community that they can organize themselves and initiate redevelopment and infrastructure improvement projects in order to improve their wellbeing. Therefore, knowledge generated from this research will further contribute in identifying challenges and opportunities in implementing community initiated urban redevelopment projects. It will also help policy makers, as well as planners in scaling up successful projects.

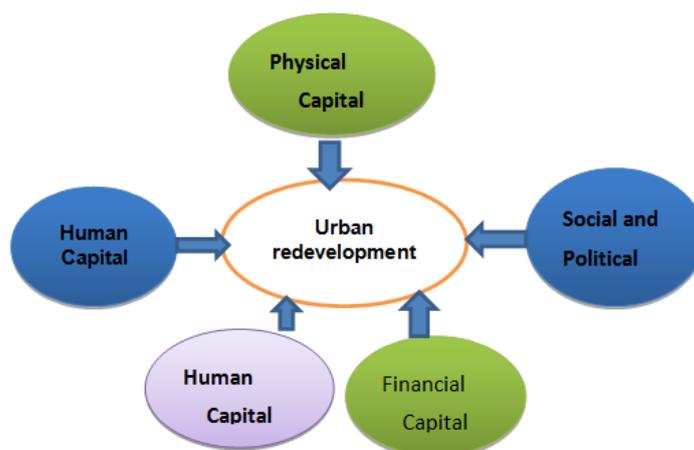


Figure 1: Categories of participation in urban redevelopment

Human: level of education and skills, personal capacity and abilities, health status, number of household members (productive, non-productive), age, household conditions (family background and problems), life philosophy

Social and political: social stratification and hierarchy (vertical), networks (horizontal), social and political contacts, relationships of trust and reciprocity, religion, gender, traditions, access to information, bureaucracy, civil and political rights, memberships

Physical: basic infrastructure (transport, shelters, water, sanitation, energy, communications), provision of public services (access to health care, education, electricity, garbage collection, access to assistance and crime protection)

Financial: income generating activities, savings, credits and loans, remittances, expenditures and costs (consumption)

Natural: land (especially security and stability of tenure), other common natural resources, vulnerability (level of threats of natural disaster)

2. The Study area and Methodology

Urbanization and Urban expansion in less developed country like is an issue given due attention by scholars and state administration for various reasons. One of the reasons is the need to minimize negative impacts of urban expansion in economic, social and environmental impacts, to bring mutual development and symbiotic integration of the rural and urban life that foster social and economic development.



Figure 2: Location Map of Tanzania and Dar es salaam City

Taking Dar es salaam, the largest local authority in Tanzania, its size has grown to more than 4 million people in less than 50 years

Land Area	881,289 Km²
Water Area	61,495 Km²
Total Area	945087 Km²
Total Population	44,928,923
Population Density	51people per Km²
Population Growth per year	2.7%
Average Household size	4.8
Urbanized population	27%

Figure 3: Tanzania Country Basic Information

Total area	3133Km²
Total population	4360000 people
Population Density	2872 people per Km²
Population growth per year	5.6%
Average household size	4.8

Figure 4: Dar es Salaam City Basic Information

Makongo is located in the north-western, peri-urban zone of Dar es Salaam city, about 17 Kilometres from the centre of the city. And approximately 2 kilometers from Mlimani City, and

2 Kilometers from Bagamoyo Road. The area is the fast growing residential and commercial hub of the city.

Historically in before 1960s, the area was covered with Sisal Plantation. Gradually, the peasants and sisal workers transformed the agricultural land into residential plots through subdivision. During the Villagization Programme (1974–76) Makongo was designated a resettlement area, to accommodate people from other areas of the city (Burra, 2004). Later, it saw an accelerated influx of individual home seekers from adjacent institutions and from other parts of the city. One category of landowners evolved during the national campaign of “Human Resources Deployment” from the late 1970s and onwards, which aimed at resettling the urban unemployed, particularly youth, to engage in (agricultural) productive activities. Under this programme, land was distributed to the newcomers by the government. The 1979 City Master Plan incorporated Makongo within the city planning boundary and designated the settlement a green belt area, and later, in the 1985 version, it included both a green belt and institutional uses. However, development of the settlement has continued through informal acquisition and subdivision of the original customary and plantation land. In contrast to the original farming residents, the new landowners or land right holders in the settlement mainly comprise the elite class; well educated public servants, retired civil servants and executives, most of them coming from other parts of the city. Low-income residents occupy the older, consolidated part of the settlement that evolved through customary land tenure and subsequent informal subdivisions. Many of the original landholders have left or have been bought out by new plot buyers.

Currently the settlement occupies an area of 1500 acres, is a densely-settled residential area with an estimated 17,000 inhabitants with an average of 5-6 persons per household, showing that there are between 2840-3400 households.

Makongo is rapidly undergoing both physical form and social structure transformations. Proximity to Mlimani City and two Universities namely Ardhi University and University of Dar es Salaam has promoted land values within the locality.

Dar es Salaam residents are facing unprecedented development pressure as the city's population and economic growth continue. These pressures are exacerbated by environmental damages to residential areas in the past and by potential future stresses. Many communities lack the resources to hire the technical expertise necessary to influence development activities in their areas. They find themselves overwhelmed by the resources that developers can devote to developing plans and proposals. Planning and implementation of urban redevelopment projects based on public funds has been facing challenges.

Most initiatives taken by the residents of Dar es Salaam's unplanned settlements over the last two decades are directed at improving the environment or securing rights to land they already occupy. Another important dimension is to mobilize resources for the provision of facilities and services that have been lacking for many years (Mhamba and Titus 2001)

As a challenge of failure of official system for planning and allocation of land for various uses, Makongo residents made an initiative for the settlement's improvement having concentrated on service provision particularly water supply, road access, land use planning and, more prominently, formation of a community-based organization in order to deal with these issues.

2.1 Methodology

The findings which follow are based on selection of a case study purposely and not in random selection. Case study of Makongo in Dar es Salaam Tanzania was selected to represent some of the diverse contextual variables theorized to affect collective action, and to

represent the different conditions in which the projects was implemented, for comparative purpose. Simply defined, action research is a “bottom-up approach to inquiry which is aimed at producing more equitable policy outcomes” (Silverman,Taylor, and Crawford 2008, 73). Its core principles include reflexive inquiry, local knowledge, collaboration, case orientation, and social action goals (Greenwood, Whyte, and Harkavy 1993). As a “paradigm of praxis,” action research utilizes social science methodologies to understand lived socioeconomic and political conditions in order to solve real problems (O’ Brien 1998). Data were collected by trained field research teams. The data presented in this paper were sourced from field-work enquiries and the author’s involvement in town Planning practice in the last few years.

The research also is based on the data of various focus group discussion and community awareness meetings with government during initiation of the redevelopment in Makongo and updated data for Makongo settlement, However this involved also interviews with Makongo residents on the their views on the projects and their expectations.. Background data on interview respondents were gathered using structured household and individual questionnaires. In addition, a greater number of unstructured interviews were conducted. These consisted of conversations between the researchers and residents.

3. FINDINGS

Findings from this case study are discussed below.

Characteristics of respondents	No. of respondents	percentage
High income class	16	15.094%
Middle (Upper) income class	26	24.53%
Middle (Lower) income class	28	26.412%
Low-income class	36	33.96%
Male	50	47.17%
Female	56	52.83%

Figure 5: Respondents profiles

A total of 106 people we interviewed in Makongo juu in which 47% were females, and 53% were males. In which 16% are high income earners while 51% are medium income earners and 34% are low income earners

Reasons for residency

In regard for the question of reason for the residency, majority responded that they decided to reside in Makongo juu due to location; it is near other places like institutions and public service. The results also revealed that 15% of interviewed responded that they decided to reside there due to the fact that is near their working place. 26% of inter viwed responded that they decided to reside there due to the fact that their family is there while others 17% decided to reside in Makongo due to thet fact that they rent a house in Makongo.



Figure 6: Reasons for residency

3.1 The need of the redevelopment

Makongo is an important area of the Hill socially, economically, nationally and internationally. The area in its built form is unable to cater for the present and future population and its impact on the urban environment and demand for infrastructure services commercial and office spaces. Even though Makongo area is planned, but the areas face problems of poor infrastructure such as access roads, water supply. Internal circulation is problematic. The narrow tracks that serve both motorized and non motorized traffic are not paved and have no side drains. Onsite sanitation is the only method available and offers two options, either a pit latrine or septic tank system. Despite Makongo being a potential area for real estate development; it has been experiencing environmental deterioration for quiet sometime. Inadequate services such as water supply, accesses roads have being constraints in developing the areas as it is supposed to be. Unique location of Makongo makes it a respectable competitor for real estate development. Potential developers, business owners, and residents must be able to accommodate their own needs as well as modern zoning and building code requirements while respecting the form of the community. Makongo Layout Review Plan will enable communities to retain greater control in implementing their Plan. It provides Makongo residents with enhanced ability to negotiate with developers and provide economic incentives for projects that fulfill the community vision.

In our fast-paced, modern lifestyles in a fast growing city of Dar es Salaam where people have multiple options as to where they can live, work, and shop, convenience and accessibility are considered essential for a successful Makongo. Parking, pedestrian and vehicular circulation must be designed in a predictable, logical manner, providing multiple routes in a highly interconnected network. At the same time, density and a flexible mix of uses are vital for creating the critical mass to ensure that Makongo is vibrant, walkable, safe, and sustainable. Section 15(7) gives the mandate to review detailed planning schemes where needs arise and Section 22(2), which gives mandate the director of Town and Rural Planning to direct the review of Details Plans within five years or at an extended time as the director may determine. Due to above mentioned reasons; there is a need for reviewing Makongo Layouts for better development of Makongo

3.2 Vision:

To have a well-planned area for sustainable economic and social development.

3.3 Objectives:

The specific objectives to be achieved by the Redevelopment plan for Makongo Juu area are:

- (i) To create an orderly hierarchy of roads within the entire sub ward and linkage to neighboring sub wards.
- (ii) To develop a series of residential clusters in the undulating settled and unsettled areas
- (iii) To reserve land for appropriate social facilities and civic amenities such as schools, health centres, fire stations, shopping areas and community centres.
- (iv) To improve accessibility to commercial facilities by creating commercial centres at localities
- (v) To provide various recreational areas and parks in the vicinity of or within residential areas.
- (vi) Accessibility for people from home to work, shops, schools, industry and recreational areas is central to the employment of resources and should be fostered to achieve the greatest possible measure of improvement within limited means/resources.
- (vii) To resolve land conflicts.

3.4 Existing Situation

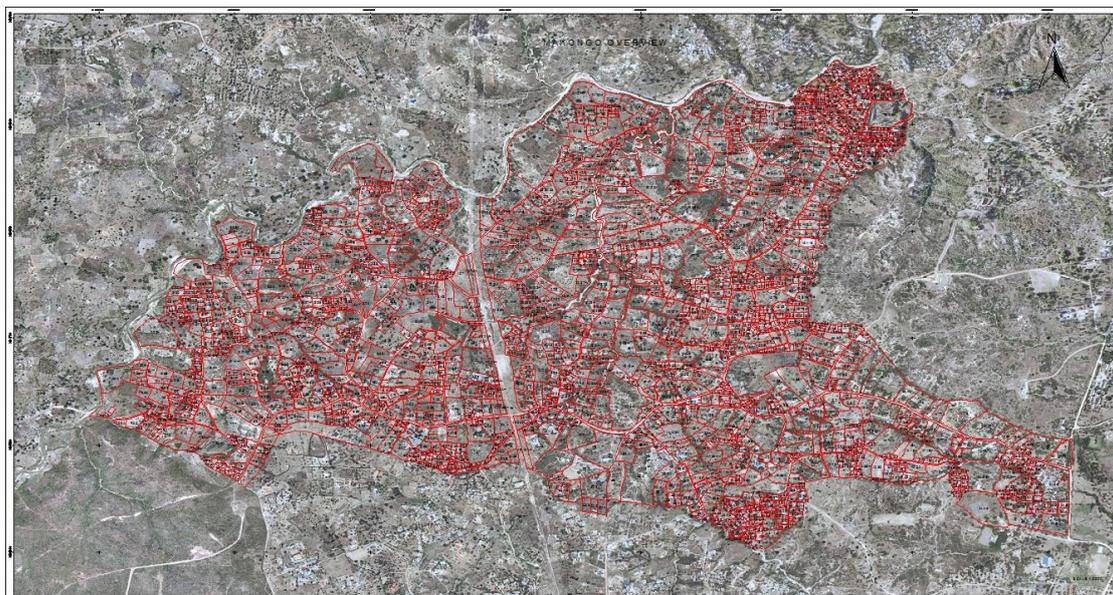


Figure 7: Makongo Overview , existing situation (source: Ministry of Lands)

3.4.1 Previous Plan: Makongo Juu land Use Plan 1985 – 2011

Makongo juu area was declared a planning area in 1985, which implied that land developers and residents in the area could not carry out construction or improvements without getting consent from the City (planning) authority. Town planning schemes to that effect were prepared between 1991 to 1993 and were adopted as official documents to facilitate cadastral surveys and issuance of rights of occupancy. It is more than 20 years now that schemes have not been implemented to achieve the desired outcome. On 22 May 2011, Makongo Juu residents accepted a proposal to adopt and implement the comprehensive development plans. If this area is planned it will be productive and will also contribute to social and economic gains.

3.4.2 Topography

The topography of Makongo is undulating with gentle slopes and plateau. It also has big valleys and streams which drain water in to Mbezi river. These valleys inhibit close movement and increase the cost of transportation. Other valleys provide access where people can pass through and others are wider in the extent that they hinder crossing to other side. So far there are few culverts and no bridges.

3.4.3 Population aspect

Makongo area has approximately 17,000 people with an average of 5-6 persons per household, showing that there are between 2840-3400 households.

3.4.4 Infrastructure

i. Water

Makongo Juu area is benefited by long water distribution network by the Government, in a project popularly known as Chinese water pipes. Most of the Makongo area has been provided with water network but enough water is not available till today. Most of the people depend on buying water from Sinza and Mwenge areas. Treatment of waste water is through soak pits and septic tanks, there is no existing waste water treatment facility.

ii. Roads

Makongo roads are earth surfaced with widths ranging from 2-8 meters. The main road has 8m width and starts from Ardhi University to Goba area. There is a 6m wide road starting from C.C.M office area to Londa Secondary School. Other roads are of 4, 3 and 2m width which are within residential areas. Most developed areas lack access roads particularly where there is congestion of informal development.

iii. Electricity

About 75% of the electricity poles are haphazardly erected within the roads.

iv. Buildings

About 75% of buildings are in good condition, built of sand and cement bricks, iron sheets, and roofing tiles, having good appearance, but incidentally built in unplanned/un-surveyed plots

v. Economic base

Most of Makongo residents are employed in various sectors but others are self employed . There are several large shops and local shops available in the area.

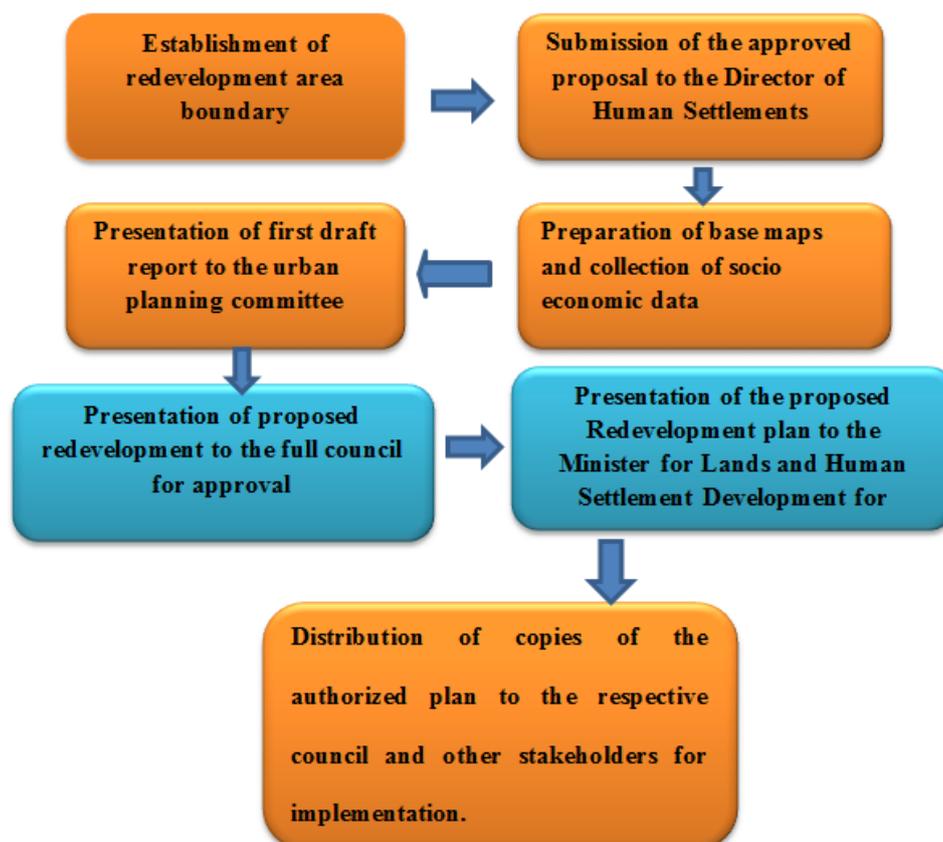


Figure 8: preparation process of redevelopment plan

3.5 Opportunities for implementing the Project

3.5.1 Willingness of the Makongo residents:

Makongo residents, especial property owners, are highly aware and needy of the development. They wish to see their settlements are improved with infrastructures and have the qualities it deserves. This is evidenced by their initiatives over two decades ago.

With the increase in demands for development in the 1990s, Makongo residents realized that many projects in the settlement could not be implemented through normal government funds nor could they be maintained from individual contributions and the community's own resources locally. Thus in 1994, a group of Makongo juu residents formed an organization known as Makongo Juu Development Association (MAJUDEA). The Organization aiming at improving their environment, despite the challenges faced by organization in accessing funds, but dream of Makongo juu residents are coming true as recently in 2011, they reinitiated their ideas of redeveloping their settlement, but at this time this involved the whole Makongo Juu community and the government supported their initiatives. This is evidenced by several meetings held at Makongo Juu between the residents and the Minister for Lands, Housing and Human settlements development and teams of experts from the Ministry and Kinondoni Municipality. More over the study revealed that people are satisfied being involved in the redevelopment process. The study revealed that 58% of respondents are satisfied by the redevelopment process while 15% are dissatisfied and 18% are neutral. 3% are very dissatisfied, and majority of them claimed that they are worry on the compensations' amounts for their lands taken for public use that may be might not be in current market price

Variable	frequency	percent
very dissatisfied	3	3%
dissatisfied	16	15%
Neutral	19	18%
Satisfied	62	58%
very satisfied	6	6%
	106	100%

Figure 9: community satisfaction in participation in the redevelopment process

Willingness of the residents to release part of their plots for allowing provision of public service

This is among the opportunities which helped the project to take off. Residents are ready to release part of their land for provision of public infrastructures such as roads, water service, electricity, drainage, public offices etc. People are ready as they were promised to be compensated according to the current market price.

3.5.2 Political will

In any development project, if it gets support from decision makers, there is a greater chance for the project to succeed. In Makongo project a positive support pioneered by the Ministry of Lands, Housing and Human settlement development, and Kawe member of Parliament is among the reasons for successful of Makongo project.

3.5.3 Community Capacity

There was a challenge of the capacity of the Makongo residents involved in redevelopment process. As reviewed in last two decades of their initiatives in redeveloping their area, most people were unable or unwilling to spend their time in a seemingly never-ending series of meetings trying to make sense of bureaucratic jargon and procedures. The study revealed that despite of having some residents who were having knowledge of the profession, the bureaucratic process of following legal procedures made them give up before achieving their goals. Different people may have very different ideas about what is important and desirable to make life better (even if they appear to belong to the same 'community of interest' and live in the same area or neighbourhood). This has been a challenge to Makongo residents, some of them didn't see the importance of joining in the initiatives. But intervention of the Ministry of Lands, Housing and Human Settlement development in supporting Makong Residents and building Capacity to the residents, and creating awareness, has highlighted that there is a bright future ahead.

3.5 Challenges for implementing the Project

The key challenges to engaging Makongo Juu residents and stakeholders in Makongo juu processes are

- *Socio-economic circumstances of people living in renewal neighbourhoods*

Makongo juu Residents' negative experiences with Government Authorities decrease their levels of trust and willingness to get involved in Urban redevelopment process. This is due to the fact that the cash compensation has been a challenge as majority of land owners claims that they are in worry whether they will be compensated according to market price. However this issue was clearly sorted by Minister of Lands

Prof Tibajuika who assured Makongo juu residents that, the development in Makongo juu is not aiming to make others poor, but to make all progress.

- *Maintaining engagement over several years across a range of community issues*

Unlike most government agencies which engage the community in one-off or issue specific policy areas, Community Renewal is tasked with engaging the community across all issues that could lead to improved quality of life and well-being. Furthermore, urban redevelopment requires intensive engagement to achieve outcomes.

- *Balancing bottom-up with top-down priorities*

Balancing whole-of-government priorities, resource limitations and the aspirations of local communities is a continuing challenge for place-based programs urban redevelopment. Managing people's expectations and encouraging government agencies to realign their core business and budgeting processes are key strategies adopted by Makongo juu urban redevelopment Task Force to address this challenge.

- *Imperative to 'get stuff done'*

A further challenge to the program's community engagement success arises from balancing the need to get projects on the ground while taking a systematic approach to ensure the underlying issues of neighbourhood disadvantage are addressed. Extensive periods of planning and analysis can alienate community members who just want to see positive action in their neighbourhoods.

Conclusion

African cities are growing at 3.9 percent annually, the highest in the world. As Africa urbanizes at a faster rate than any other region in the world, a more integrated approach in urban redevelopment is needed to face these Challenges. More Comprehensive, Innovative & implementable redevelopment approaches are needed in this fast growing continent. Capacity Building to land use Planning Professions is highly needed. Makongo represents a case of an urban community taking land use planning and settlement management initiatives to address their problems, to promote their livelihood and to safeguard their rights to land and to a democratic space in planning. The case portrays the potentials and ingenuity of popular, community initiatives in their responses to the growing deficiencies in settlement management and provision of urban services by the public sector. The other factor that facilitated the participation process of Makongo was the intensive public consultation conducted with the different groups of the residents. These forums had played an important role in bridging the perception of the public and the government about the Makongo juu project. In addition, the public forums falls in the *consultation* level of (Arnstein 1969) *Ladder of Citizen Participation* whereby the public was able to forward their concerns with no guarantee of being considered as it was evidenced by the 3% dissatisfaction with the public consultation of the study's informants and failure to consider some of the public's demand. However, the establishment of the representative committee has increased the level of participation since they were advising the Task force which comprise the Ward, Ministry and Municipal officials whereby the decision making power were still in the hands of the officials, thus there is a need for involving private sectors in detailed planning and implementation of redevelopment plans for sustainability.

References:

Arnstein, Sherry R. (1969) "A Ladder of Citizen Participation," JAIP, Vol. 35, No. 4, July 1969, pp. 216-224

Burra, M. (2004). Land Use Planning and Governance in Dar es Salaam: A Case Study from Tanzania. Nordiska Afrikainstitutet

Cochrane, A. (2003) *The new urban policy: towards empowerment or incorporation? The practice of urban policy*, in: R. Imrie & M. Raco (Eds) *Urban Renaissance? New Labour, Community and Urban Policy* (Bristol: Policy Press).

Greenwood, Davydd J., William Whyte, and Ira Harkavy. 1993. *Participatory action research as a process and as a goal*. *Human Relations* 46 (2): 175-93.

HARVEY, D. (1973), *Social Justice and the City*, London, Edward Arnold.

O'Brien, Rory. 1998. *An overview of the methodological approach of action research*. www.web.ca/~robrien/papers/arfinal.html

Silverman, Robert Mark, Henry L. Taylor, and Christopher Crawford. 2008. *The role of citizen participation and action research principles in main street revitalization*. *Action Research* 6 (1): 69-93.

The participatory planning paradigm shift: Comparing disciplines and methods

Jan-Hendrik LE ROUX, Elizelle Juaneé CILLIERS, North West University, South Africa

ID Number: 167

Public participation is a process where the public is involved in decision-making, regarding planning aspects that interests and affects them. There are various benefits for Town Planners and other professions when increasing the inclusion of the public in the decision-making process, especially in terms of development issues and creative thinking. Advantages include the improvement of the effectiveness of plans, the resolving of conflict by enhancing consensus between stakeholders and the building of social capital. Along with the advantages are also certain challenges and limitations, regarding public participation, Town Planners have to deal with the choice of participants, practical implementation of theoretical ideas and in certain cases dealing with the unrealistic expectations of the communities.

This study firstly focuses on the paradigm shift public participation has experienced over time and the contrasting approaches that emerged from it. This study further focussed on how public participation is defined and executed in different professions and disciplines. The opinions, methods and problems, regarding public participation, as used in Planning, Health Sciences and Geography in South Africa, was evaluated and compared.

The research concluded with recommendations to enhance the successfulness and effectiveness with regards to the current public participation approaches in South Africa, based on the collective results and findings from the various perspectives and disciplines, as well as the findings regarding the effect of computerised methods on participatory processes.

Introduction

South Africa is a very unique country due to its history and heritage and as a result requires a unique approach to planning, accommodating the different cultures in the country, whilst still improving the country as a unit in terms of its economic, environmental and social status. This poses a huge challenge to unite all the citizens of the country, regardless of the differences in race, culture or belief system.

Public participation is one method which, if implemented correctly, can provide valuable assistance in the search of unity in South Africa, whilst simultaneously enhancing the success of future urban and rural planning. Public participation has many benefits, which will be mentioned later in the paper. It has the ability to help citizens reach a consensus regarding a certain matter, improve decision-making processes and ultimately to help a country move forward and improving its structures. This is exactly what a country, such as South Africa needs in order to experience progression and improvement.

Public participation in South Africa therefore needs to be critically evaluated to generate best-practice methods. In this study the current state of public participation in South Africa will be evaluated. The study will conclude by providing recommendations to enhance the effectiveness with regards to the current public participation approaches in South Africa, based on the results and findings made in this study.

1. Defining public participation

Ordinary citizens, who form part of the general society, want to be informed in detail about decisions that affect them before these decisions are taken (Arbter *et al.*, 2007:6). They want to be able to have a say in potential developments and have direct involvement in current projects and all the development decisions that go with it. Public participation basically comprises all of this. It is a basic principle of democracy. Voting in elections and supporting petitions, are other examples/forms of public participation (Toth, 2010:296).

Public participation can be described as the process where the ideas, opinions and concerns of local communities are collected and analyzed to be used as resources to improve plans and projects that interests and affects them (Ferguson & Low, 2005:7). It is a tool which Town and Regional Planners use to give them a better knowledge of a specific site, as well as an insight to the needs of the community residing in the specific area. This knowledge can then be used by the Planner and other experts (i.e. Developers, Architects and Quantity surveyors) to develop better, more sustainable projects.

Currently in South Africa there is not much emphasis placed on comprehensive public participation. Although policies provide support for participatory processes (i.e. Environmental Impact Assessments (EIA), Integrated Development Plans (IDP), Environmental Management Frameworks (EMF)) these theoretical ideas are not always implemented to their fullest extent.

1.1 Benefit of involving the public

The benefits of public participation include, but are not limited to the following:

- Improve effectiveness (Smith, 2003:25):
 - Decisions can be complex and therefore all relevant information, views, interests and needs should be included and understood;
 - Public participation results in higher quality decisions.
- Meet a growing demand for public participation:
 - The public has a desire to be involved in making decisions that will affect them;
 - There is a need for greater openness of decision-making processes;
 - The public doesn't always trust only expert advice.
- Resolve conflicts:
 - Negotiate tradeoffs;
 - Seek consensus between public and developers.
- Enhance public knowledge, understanding, and awareness (Ferguson & Low, 2005:9):
 - Share information with the public;
 - Opportunities for stakeholders to hear each other and better understand the range of views on an issue.
- Allocate scarce resources (Ferguson & Low, 2005:9).
- Empowerment of the local community (Petermann & Troell, 2007).
- Improving decision-making (Petermann & Troell, 2007):
 - Develop a consensus among key role players to improve performance;
 - Determine the impact of the project in question.
- Understand the needs of the actual users of the space:
 - Build social capital (Cilliers *et al.*, 2012).

Apart from the advantages that public participation has to offer, it is also important to note that the negligence of participatory planning processes as part of any future development plan, may hold many repercussions which are negative for society and also for the remainder

of the specific project. Public participation is however, not a simple and easy task. It has various challenges and limitations as explained accordingly.

1.2 Challenges and limitations of public participation

One of the main challenges when considering public participation is the issue of culture and ethnic differences (Beebejaun, 2006:4). In South Africa this is especially true, because of the multi-cultural population and segregated urban form.

Petermann and Troell mention the following challenges which Town planners are confronted with:

- The choice of participants: For the best results all possible participants should be included, but due to time and budgetary constraints this is not always possible. Stakeholder identification is thus a crucial issue to ensure successful public participation.
- From theory to practical implementation: Petermann & Troell (2007) states that it is not easy to implement theories during the participatory process. It is easy to be creative and jot a few notes down on paper, but to implement these ideas is very difficult. Creative approaches are needed to facilitate the involvement of stakeholders and ensure comprehensive public participation.
- Life span: One of the key words in Planning is “sustainability.” It is therefore important to sustain the benefits of public participation beyond the life span of a specific project. Public participation should keep the future vision in mind, while addressing current needs.
- Unrealistic expectations of communities: It is extremely important to get communities involved in decision-making processes, but communities should be aware of their role and level of involvement in the process. If expectations can't be met by Planners and other experts in the same field, it may result in an unhappy and rebellious community which in turn can lead to more damage being done (Ferguson & Low, 2005:9).

1.3 Paradigm shift

It is important to mention and discuss the fact that public participation approaches have changed a lot during the past couple of decades. These changes can be seen in South Africa, as well as in the rest of the world. Over time the idea of public participation and its role in development has climbed up and down the “importance ladder.” Through all this shifting two basic paradigms has surfaced namely the top-down approach and the bottom-up planning-approach, as captured in Table 1.

Top-down	Bottom-up
No real public involvement	Public involvement
Special interests	Public interests
Capitalistic	Democratic

Table 1: Two different paradigms in public participation

Source: Own Creation (2012)

Smith (2003:22) refers respectively to these approaches as favouring “special interests” (referring to the top-down approach) and “public interests” (referring to the bottom-up approach).

The top-down approach in terms of public participation basically implies that the public is not the main focus group or decision-maker, but rather the local authorities and policy-makers. The public is mainly “informed” about decisions, and communities don’t have an advisory or co-planning role in the process.

The bottom-up approach with respect to public participation is nearly just the opposite. The public is the main focus group and decision-maker. More detailed procedures are taken to involve the community and more community members are interviewed to get a more holistic view of the current situation (Smith, 2003:22).

This “more sustainable” bottom-up approach is starting to get increasingly important for Planners as well as for other disciplines, in South Africa and the rest of the world. However, from research conducted it was evident that different disciplines approach public participation in different ways, and the bottom-up approaches of participatory planning varies among the disciplines.

2. Comparing participatory processes

In an attempt to create a best-practice approach to comprehensive public participation, various disciplines in South Africa were compared. The empirical investigation of this study focused on three different professions (or disciplines) in South Africa, namely Town and Regional Planning, the Health Science Department and Geography/Environmental Science Department. The goal was to analyse the following form each discipline:

- 1) Views regarding public participation?
- 2) How public participation is executed in the specific profession (methods)?
- 3) In their own opinion, what part of the public participation process needs to be revised and improved?

The results obtained gave an indication of the current state of public participation in South Africa and between the different disciplines.

2.1 South Africa: Town and Regional planning approach

South Africa (2012:7) defines Land use management as “regulating and managing land use and conferring land use rights through the use of schemes and land development procedures.”

Planning in South Africa is regulated by the Municipal Structures Act [\[No. 117 of 1998\]](#). It functions under the authority of the IDP (Integrated Development Plan) and SDF (Spatial Development Framework) of each district in the country. The IDP clearly acknowledges the public participation process. However, there is no legislation guiding the quality or quantity of public participation needed, and public participation is thus (although compulsory for most development applications) not monitored or measured.

2.1.1 Methods

Some of the public participation methods which are used in Town and Regional Planning are guided by specific legislation: The Town-Planning and Townships Ordinance (15 of 1986) mentions the advertising of applications in newspapers {Article 56(b)(i)} and by placing informative notice boards at the site of the applicant {Article 56(b)(ii)}.

The public can respond to these advertisements by objecting to an application. Article 56(2)(a) of the Ordinance states that the local authority may give further notice of an application by “posting a notice in such a form as may be prescribed in a conspicuous place on its notice board...”.

According to Article 59(1) of the Ordinance “An applicant or objector who is aggrieved by a decision of an authorized local authority...may within a period of 28 days from the date of the publication of the notice...appeal by lodging a notice of appeal...” This is also where the public can let their concerns be heard.

Lastly, according to the Town-Planning and Townships Ordinance (15 of 1986), if someone in the public objects a hearing will have to be scheduled according to Article 59(5)(a) of the Ordinance. A Board shall determine when such a hearing will take place. Article 59(6)(b) states that the public can state their case and provide his/her reasons why an application should not go through.

2.1.2 Problems – Needs revision

As stated earlier there are a lot of processes involved in land use management. These processes are all being “guided” by the Town-Planning and Townships Ordinance (15 of 1986).

There are no clear objectives and measurements for successful participation processes. According to the Ordinance, a site notice and two advertisements (one in the local newspaper and one in the provincial paper) are adequate notice and involvement of the public. “An objector may appeal within a period of 28 days from the date of the publication of the notice” – Article 59(1) of the Town-Planning and Townships Ordinance (15 of 1986).

Furthermore the Ordinance does not recognize the adjacent house owners of a specific terrain, and therefore they (the people that will be most affected by a new development or rezoned erf) are not even directly approached.

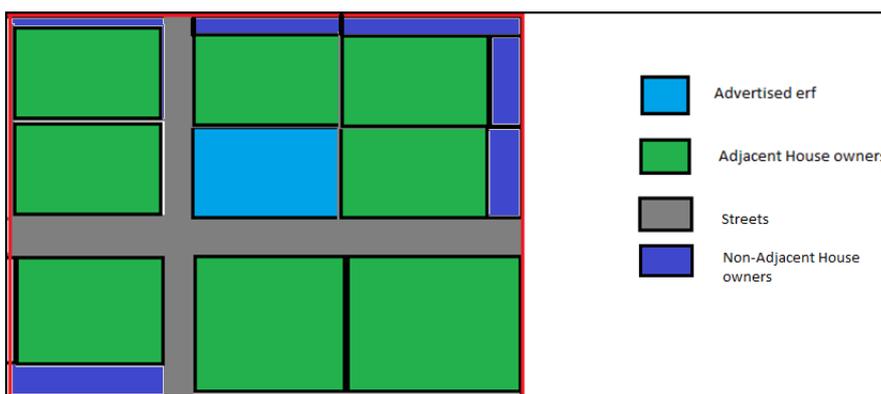


Figure 1: Adjacent land house owners
Source: Own creation (2013)

The level of vocabulary used in the newspaper articles and on the notice boards are extremely high. Excellent vocabulary with difficult terminology is definitely beneficial when working with professionals in the corporate world, but for public participation it is not always necessary. The general citizen (especially in South Africa, with the high levels of poverty and the low levels of education) can't always understand what is being said on the notice boards

and in the advertisements. The ordinance assumes that the public has the necessary knowledge about land use management processes, but in reality it is not true.

2.2 South Africa: Health Sciences approach

"We can do this and that, but what is it that YOU want?" It's a summary of exactly how the Health Sciences discipline approaches public participation. They work using grass roots approach, implying using a bottom-up approach.

Here the focus is on working with the community, not for them. It is viewed as a more sustainable approach – human driven, making sure that the local community understands exactly what it is they are doing at a specific terrain when they are working on a project. The objective is not only to improve the health of the people, as other parties might think, but rather to enhance and equip communities with skills and education.

By working this way in creates a sense of identity and ownership among community members as well as pride and passion.

2.2.1 Methods

The public participation methods used in the Health Science discipline is approached from a bottom-up perspective.

Before a project or initiative is started, a meeting is scheduled for all the relevant stakeholders where the vision of the project is shared. It is important to mention that the stakeholders do not only involve the local community, but according to Sequeira & Warner (2007:10) stakeholders include all the "persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively. Stakeholders may include locally affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians, religious leaders, civil society organizations and groups with special interests, the academic community or other businesses." At these meetings each stakeholder can state his/her case and say what problems he/she sees by tackling this project. The aim of the meeting is to reach a consensus between all the stakeholders.

Another method is by doing an ABCD needs assessment. "A growing community-organizing movement, asset-based community development (ABCD), posits that the glass is half full rather than half empty. Rather than focussing on community deficits like crime, vandalism, unemployment or drugs, ABCD aims to identify and mobilize the positive attributes inherent in local government, businesses, nonprofits, voluntary associations and individuals." (Walker, 2006). The ABCD Institute spreads its findings on capacity-building community development in two ways: Firstly through extensive and substantial interactions with community builders, and secondly by producing practical resources and tools for community builders to identify, nurture and mobilize neighbourhood assets (Assessnow, 2009).

2.2.2 Problems – Needs revision

Comprehensive public participation would require the public to also be included in the processes, and not just the selected stakeholders. Another problem that were identified were the issue of different cultures, beliefs and backgrounds, as interacting and communicating with the local community itself is a challenging issue.

2.3 South Africa: Geography & Environmental management approach

Geography- and Environmental management disciplines are probably the disciplines with the most public participation in practice in South Africa. These disciplines are however very

sceptic to use the term “public participation” (DEAT, 2002:6). They say it can be misleading in a number of ways. Every citizen is important, but the term “may be misinterpreted as excluding the private sector and non-decision making authorities.” (DEAT, 2002:6). These groups may perhaps feel excluded from the public participation process. Geography- and Environmental management disciplines therefore prefer to use the term “stakeholder engagement” when talking about participatory processes.

Environmental management defines stakeholders as “a sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties.” (DEAT, 2002:6).

2.3.1 Methods

The Geography and Environmental management discipline uses a significant variety of methods to get the local communities actively involved in decision-making processes. Some of the methods they use include (DEAT, 2002:15):

1. **Legal Notices** - Notices which informs stakeholders and the rest of the public of a certain project or proposal. These notices are required by law (South Africa, 2010:59).
2. **Advertisements** - Advertisements in newspapers or magazines to inform stakeholders and the rest of the public of a certain project or proposal. It is important that these advertisements should not be hidden in sections in the newspaper where they are generally overlooked.
3. **Websites** - Websites are created that conveys project information as well as announcements regarding the project or proposal. Readers can provide their opinions from their homes via the internet.
4. **Field trips** - Tours to the specific site where stakeholders can see for themselves what’s going on at the site and what the proposed plans are going to look like.
5. **Public meetings** – The proponent meets with the stakeholders in a public place. Anybody can join these meetings. At these meetings the proponent gives a presentation to state the situation, which is then followed by a question and answer session.
6. **Central information contact** – Designated contact persons are chosen to be communicators for stakeholders and the public.
7. **Surveys** – Surveys for collecting information from a percentage of the population. Surveys can be telephonically or through questionnaires.

2.3.2 Problems – Needs revision

A few problems or challenges has been identified in this discipline which needs to be revised in order to make the public participation process, or “stakeholder engagement process”, more significant and sustainable.

According to DEAT (2002:16) the public participation process is only undertaken during the environmental assessment stage. The problem with this is that many planning- and strategic decisions have already been made at this stage, which means that the public could not give any insights or raise concerns of the specific project.

Furthermore, low levels of literacy, low language education and financial constraints are all challenges that are faced. These challenges lead to capacity constraints – it’s difficult to get a mass amount of citizens to engage effectively and equitably in the participation process (DEAT, 2002:17).

When it comes to environmental issues there is generally a lack of interest and concern among local communities. The level of public participation regarding environmental issues thus faces a huge challenge. If the community don't show any interests or express their concerns, environmentalists cannot execute their projects as accurately as they would have wanted to (DEAT, 2002:17).

3. Conclusions

It is evident that public participation is crucial when development decisions have to be made, no matter what type of decision it is or in what discipline or profession it emerges. It forms part of any decision-making process and is necessary for effective and successful decisions to be made in terms of future development options and possibilities.

From the theoretical findings made regarding public participation, it is clear that participatory processes provides various advantages for Planners and communities, but it also comes with various challenges.

A SWOT-analysis of the current state of public participation in South Africa was done showing the following results:

- Strengths:
 - Improve effectiveness - The public can also be creative and innovative.
 - Empower the local community by providing opportunities and information.
 - Conflicts can be resolved by negotiating tradeoffs.
- Weaknesses:
 - It is difficult to implement theoretical ideas in the business-environment.
 - Unrealistic expectations of communities which can't be met.
 - Decisions made through participatory processes are not always sustainable.
- Opportunities:
 - By involving the public, better and more creative plans can be developed.
 - Public can develop a sense of ownership and identity though participation.
 - Public can enhance their knowledge, understanding and awareness.
- Threats:
 - Do not give a community false hope - it could lead to rebellious communities.
 - Make sure that the participatory regulations given in certain policies, such as the EIA, are strictly followed.
 - Always be consistent and fair when working with community members

The main objective of the empirical study was to compare the public participation approaches between different disciplines in South Africa. By comparing these disciplines an accurate picture could be formulated regarding the current state of public participation in South Africa. **Error! Reference source not found.** summarises these approaches between the Town Planning-, Health Sciences- and Geography/Environmental disciplines in South Africa.

Table 2: Comparing approaches towards public participation from different disciplines

	Town and Regional Planning	Health Sciences	Geography
Method	<ul style="list-style-type: none"> • The Town-Planning and Townships Ordinance (15 of 	<ul style="list-style-type: none"> • Bottom-up approach • Before project is initiated – 	<ul style="list-style-type: none"> • Combination of Town Planners and Health

	<p>1986) act as a guideline for public participation.</p> <ul style="list-style-type: none"> • It states that the public should be given notice when there is an application (notice boards and newspaper article). • A member of the community can appeal within 28 days from the publication of the notice. • If there are objections, a hearing will take place where community members can state their opinions or feelings. A Board shall then make a final decision. 	<p>meeting is scheduled for all relevant stakeholders to discuss the vision of a proposal of plan. Each stakeholder can state his/her case at this meeting and compromises are made until a consensus is reached.</p> <ul style="list-style-type: none"> • Involve the public by going into the community and asking exactly what it is they want. • ABCD needs assessment – What are the needs of the community. 	<p>Sciences.</p> <ul style="list-style-type: none"> • Also a bottom-up approach to public participation, but with necessary legislation in place to guide some aspects of the process (NEMA). • Similarities with Town Planning – Also uses notice boards and newspaper articles. • Public meetings may be held where all stakeholders are informed of proposals and projects.
Positive	<ul style="list-style-type: none"> • Every Planner follows the same guidelines (Ordinance), therefore the format of notices and the application processes stays the same in every part of the country. • Other policies (IDP and SDF) within the Planning discipline support participatory processes. 	<ul style="list-style-type: none"> • By getting all relevant stakeholders to reach a consensus, a lot of conflict is avoided. • Bottom-up – Follow a grass root approach. Makes the community very optimistic by talking directly to them and making them feel valued – gives ownership and identity. • Sustainable approach – human driven. Not only to improve health, but also equip communities with skills and education. 	<ul style="list-style-type: none"> • The public are better informed when there are decisions to be made, while the necessary legislation is still taken into consideration. • Notice to adjacent house owners should be given.
Negative	<ul style="list-style-type: none"> • The Ordinance is limited in terms of its approach solely to public participation. It does not accommodate participatory processes as well as it should. • Notice boards and newspaper articles are the only way of notifying community members about applications. • Realistically, most of the community members don't even see the newspaper article, which is published for only 2 consecutive weeks. • Adjacent house owners not taken into consideration. • Level of vocabulary in notices is too high for most normal community members to understand. 	<ul style="list-style-type: none"> • Different cultures and ethnic groups in South Africa. Difficult to accommodate and communicate with all the different cultures. • Communities may tend to complain about other "less relevant" issues and if you don't look into those issues they may get demanding. 	<ul style="list-style-type: none"> • A lot of legislation to support public participation, but it exists on paper and has not yet been implemented in practice. • Participation process is undertaken during the environmental assessment stage, where many strategic decisions have already been made. Therefore the public can't influence those decisions. • Different cultures and ethnic groups in South Africa. Difficult to accommodate and communicate with all the different cultures.

Source: Own creation (2013)

It can be concluded that in South Africa there are positive and negative aspects regarding public participation. Although basic participatory processes is in place and captured in legislation, the issue of comprehensive and qualitative participation should be evaluated and enhanced.

South African town planning disciplines can learn from other disciplines and thus equip itself with better tools and “formulas” to enhance creative and inclusive participation processes. Table 3 indicates the ideas and initiatives Town Planning in South Africa can “borrow” from other disciplines to enhance its current approach to public participation.

Table 3: *Initiatives from other disciplines to enhance the current approach of public participation in Town Planning*

Health Sciences	Geography	International approaches
<p>1) Bottom-up approach – take the local communities into consideration. Reach them at their level, connect with them, and find out exactly what their needs are (not necessarily money, but perhaps education or ownership).</p> <p>2) Sustainable approach – Human driven, by making the community understand exactly what the mission is of a certain project. Objective is not only to improve health, but also to equip communities with skills and education.</p> <p>3) Balance between legislation and reality – legislation more simple in the sense that community members understand it.</p> <p>4) Before a proposal of project is initiated – meeting is scheduled for all relevant stakeholders. Stakeholders are informed of the proposed project. Compromises are made and a solution is found where and all stakeholders walk away satisfied.</p>	<p>1) “Stakeholder engagement” rather than “public participation” – participatory processes include the public, but also authorities, municipalities and other interested and affected parties.</p> <p>2) Bigger variety of methods to inform the public of proposals and projects e.g. websites and field trips. Through these methods the public can also ask questions, raise their concerns and give their opinions with respect to a certain project.</p> <p>3) Notice to adjacent house owners should be given (South Africa, 2010:60).</p> <p>4) Uses reasonable methods when a person wants to, but can't, participate in the process, because of disability, illiteracy of any other disadvantages.</p>	<p>1) Don't only use traditional methods, but also more creative participatory methods to intrigue and involve community members even further.</p> <p>2) Holistic approach – seeks to improve social capital and to enhance place-making within public spaces through public participation.</p>

Source: Own creation (2013)

These positive contributions of the various disciplines can be used to improve the participatory planning approaches used within the town planning scope.

3.1 Improving public participation in Town Planning in South Africa

The Town-Planning and Townships Ordinance is one of the key documents that guide the participatory process in South Africa. Other policies that play a cardinal role in determining these processes within the Town Planning arena are IDP's and SDF's. These documents all address public participation, but there are still a few problems with these policies which

undermine public participation and should be rectified to improve participatory processes in Town Planning:

- 1) Definition – It is necessary to define public participation in terms of a planning context. The definition should state the importance, scope and measurable of successful participation.
Town Planning can in this situation learn from the Geography department, who rather uses the term “stakeholder engagement” than public participation. Stakeholder engagement is defined in section 2.3 by DEAT (2002:6). If public participation can be redefined and structured as something like the above mentioned definition it will provide more clarity and better goals can be set.
- 2) Vocabulary – The vocabulary of a document is a very accurate reflection of the professionalism of a document. It is however true that the higher the level of vocabulary, the higher level of education you need to understand the language. South Africa has a very low level of education throughout large parts of the population, which means that the general man/woman on the street doesn’t necessarily have the education to fully understand extremely high vocabulary. Therefore the policies and other relevant legislation, which Town Planners use for public participation, cannot fully be understood by local community members. Newspaper articles and notice boards speak a “language” that can’t be understood by the uneducated.
Policy-makers don’t have to lower their standards and decrease the level of vocabulary of the policies itself, but any documentation or advertisement that can be viewed by the public should be composed with a level of vocabulary that is still correct and professional, but which is readable and can be understood by a local community member.
- 3) The IDP and SDF make provision for participatory processes, but current guidelines within these policies should be revised and improved. More guidelines should be added to accommodate public participation even further. There should be some form of measurement to determine successful participation processes, stating outcomes and specific guidelines to conduct inclusive participatory planning processes.

Public participation is extremely important and the benefits one can gain by executing it in practice are incomparable with what would happen if public participation was excluded. There are certain barriers currently prohibiting participatory processes to develop to its fullest extent, but with the correct management and structures in place, participatory processes in South Africa can improve. Best-practice approaches from various disciplines can be used to guide the Town Planning approaches to be more inclusive, creative and successful. This will lead to major improvements in terms of sustainable development and future town planning.

4. Acknowledgements

This research (or parts thereof) was made possible by the financial contribution of the NRF (National Research Foundation) South Africa.

Any opinion, findings and conclusions or recommendations expresses in this material are those of the author(s) and therefore the NRF does not accept any liability in regard thereto.

5. Bibliography

ARBTER, K, HANDLER, M, PURKER, E, TAPPEINER, G & TRATTNIGG, R. 2007. The public participation manual - Shaping the future together. Date of access: 5 May 2013.
<http://www.oegut.at/downloads/pdf/part_publ-part-manual.pdf>

- ASSESSNOW. 2009. Asset-Based Community Development (ABCD) Institute. <http://assessnow.info/resources/etools.2008-07-25.3417509089> Date of access: 03 Sept. 2012.
- BEEBEEJAUN, Y. 2006. The participation trap: The limitations of participation for ethnic and racial groups. *Journal of Planning and Architecture*, 11(3):3-18.
- CILLIERS, E.J., TIMMERMANS, W, VAN DEN GOORBERGH, F & SLIJKHUIS, J.S.A. 2012. The Lively Cities (LICI) background document: LICI theory and planning approaches. Wageningen: Wageningen University of Applied Sciences, Van Hall Larenstein).
- DEAT. 2002. Stakeholder engagement - Integrated environment management. Information series 3. Department of Environmental Affairs and Tourism (DEAT), Pretoria.
- FERGUSON, S & LOW, C. 2005. A handbook for public participation in local governance. Date of access: 5 May 2013.
- PETERMANN, T & TROELL, J. 2007. African regional workshop on public participation in international waters management. <http://iwlearn.net/publications/ll/reader-african-regional-workshop-on-public-participation-in-international-waters-management-acwr> Date of access: 5 May 2013.
- SEQUEIRA, D & WARNER, M. 2007. Stakeholder Engagement: A good Practice Handbook for Companies Doing Business in Emerging Markets. 1st ed. Washington, D.C.: International finance corporation.
- SMITH, B.L. 2003. Public policy and public participation: Engaging citizens and community in the development of public policy. Atlanta: Health Canada.
- SOUTH AFRICA. 1986. Town-Planning and Townships Ordinance No. 15 of 1986.
- SOUTH AFRICA. 1998. Municipal Structures Act No. 117 of 1998.
- SOUTH AFRICA. 2010. National Environmental Management act 107 of 1998: environmental impact assessment regulations. http://thornton.co.za/resources/gg33306_nn546a_pg116-145.pdf Date of access: 10 June 2013.
- SOUTH AFRICA. 2012. Spatial planning and Land use management Bill. (Notice 14). Government gazette, 35445:2, 15 Jun.
- TOTH, B. 2010. Public participation and democracy in practice - Aarhus convention principles as democratic institution building in the developing world. *Journal of Land resource & environmental law*, 20(3):295-330.
- WALKER, E. 2006. Building from strength: Asset-Based Community Development. <http://www.bos.frb.org/commdev/c&b/2006/winter/building.pdf> Date of access: 5 May 2013.

The “Three-Old” Policy of Community Renewals in China:

Based on Cases in the Pearl River Delta Region

Fengqing Li , Ph.D. Candidate of Tongji University, China

Huang Huang, Engineer of Guangzhou Urban Planning& Design& Survey Research Institute, China

Synopsis: The wide-ranged community renewals in the PRD Region

The Pearl River Delta (PRD) Region , with an area of 41.7 thousand km² and a population of 430 millions, is an important global manufacturing base lies in the South coast of China. Encouraged by a regional policy named “Three old”, which is specially permitted by Chinese central government as a compromise to the reality, this region has been undergoing a wide-ranged community renewal since 2009. According to the statistics from Department of Land and Resource of Guangdong Province, these renewals have covered more than 600 km² urban and rural built-up area by 2013, which is 3.5 times of the total built-up area in Hongkong.

What caused the wide-ranged community renewals in this region recently and why the authoritarian government compromised? What was the mechanism for policy implementation and why these renewals regarded as the origin of community engagement in China ? These questions will be further discussed in this paper.



Figure 1: The Pearl River Delta (PRD) region in south China.

1. Fundamentals of the “Three-old” Policy for community renewal and engagement

1.1 Regional background :renewal as the only way out from the dilemma for local governments.

According to the building life limit and the economic life limit, community renewal is inevitable after a period of urban development (Arthur O'Sullivan, 2011). After World War II, western countries had gone through wide-ranged community renewals from the manufacture era to the post-industrial era. However, these renewals had not occurred in China until 1990s. As the expansion of urban population in PRD, a large number of industrial lands had been replaced by residential area. Moreover a upsurge in community renewal was in the making for the “land quota” was put into operation in 2006.

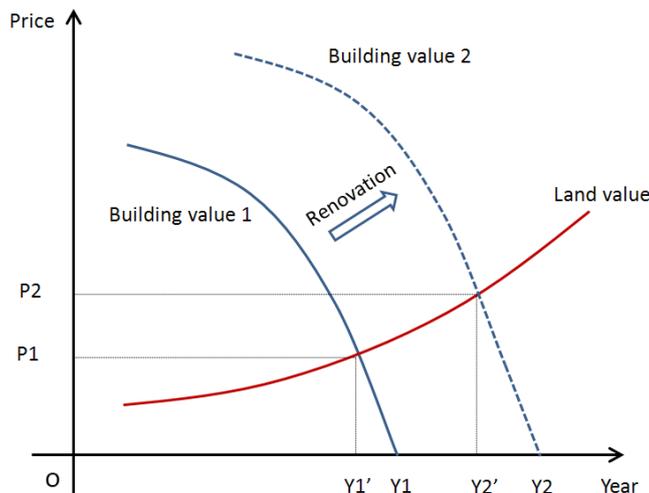


Figure 2: building life limit and the economic life limit

(Y1: building life, Y1': economy life, Y2: building life after renovation, Y2': economy life after renovation. According to Arthur O'Sullivan, 2011)

The “land quota” was addressed by the Central Government of China who hold a tense attitude towards massive consumption of farmland during rapid urbanization, as Chinese written history shows that riots of starving refugees were the main reason of 24 dynasties fell in the past thousands of years. By publishing the Planning Framework of National Land Use(2006-2020) , the Ministry of Land and Resource stipulated the bottom line of farmland with an amount of 1.8 Billion MUs (300 million Acres), and the remaining land quota will be distributed to provinces and municipalities as construction land year by year. Though the quota itself is highly questioned as the food supply has been guaranteed by modern agriculture and international trade today, this policy implement strictly. By such means, the constraint of urban expansion named “construction quota” is founded. No one, including the local government, could occupy any extra farmland without the distributed quota.

As the earliest industrialized region of China, the GDP of the PRD Region soared from 6.5 billion US dollars in 1978 to 757.9 billion US dollars in2012. Meanwhile, urban built-up area expands from 1765km² into 6671km² during past two decades according to the figures of National Bureau of Statistics. The quota for major cities in the PRD Region was nearly exhausted. Take Guangzhou, the capital city of Guangdong for instance, 41 km² of farmland was constructed annually by average from 1996 to 2009, and if this continues, the land quota 2020 for Guangzhou will be spent out before 2014. Community renewal (reconstruction for built-up area needs no quota) is the only way to cope with the dilemma between quota shortage and rapid development.

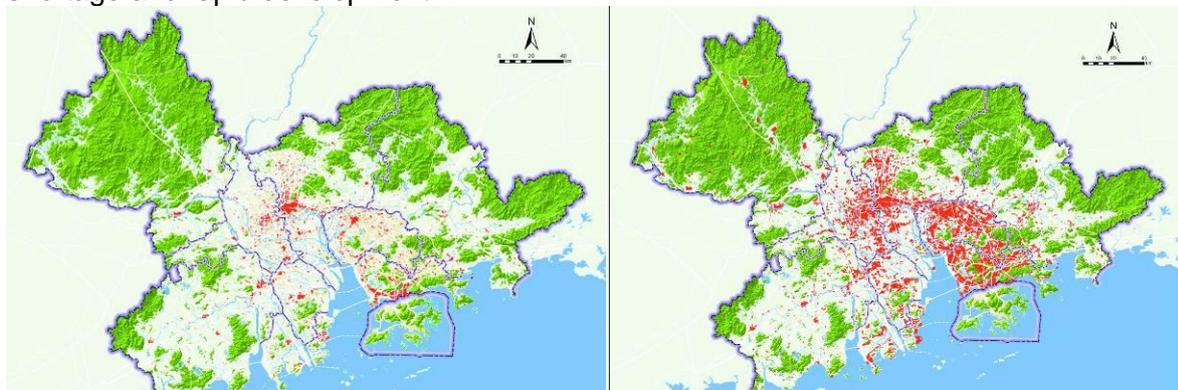


Figure 3:Rapid expansion of constructed land in the PRD Region from 1990 to 2005

1.2 Legislative Background: the “Three-old” policy as a compromise to the reality

According to the Land Administration Law of the PRC (2004), all land in city belongs to the nation as a whole. Any organization, enterprise or individual can rent the state-owned land from the local government for profit-making development through auction. The lease time differs from planning functions: 70 years for housing, 40 years for commerce and 30 years for industry. According to the statistics published by the National Bureau of Statistics in 2010, land rental revenue summed up to 300 billion US dollars by 120 major cities in China which contributed more than 50% of local financial revenue. Chinese local government is becoming land-running enterprise in reality. On the other hand, the law defines that land in rural area (except for mines, meadows, forests, waters, deserts) belongs to village collectives. All rural land are divided evenly and rent to all villagers for free. In order to maintain monopolistic revenue for state-owned land the law also defines that rural land can only be constructed for villagers' dwellings or other agriculture structures. If a real estate program (housing program, commercial program) or a factory needs to be constructed on rural land, the land must be sold to the local government as state-owned land at first in low price, and then it can be sold to developers through auction in remarkable monopolistic price. That is the biggest “commercial confidentiality” of Chinese urban economy.

During the past 30 years, numerous factories had been established on rural land in the PRD Region as “village-ship factories” which belong to rural structures in the name of serving agriculture. At the beginning, these factories were founded by village collectives to deal with agricultural product indeed, which were sanctioned, but more rural land was rented to small enterprises for profit making after a period of time. The local mercantilism governments often took laissez-faire attitude to these illegal factories for two reasons: first, their contribution of tax and GDP; second, the price of land to be developed into industry area was very low so it seemed to be no damage to government benefits. These illegal constructions did not touch the bottom line of the local governments until the local governments realized that the land quota was largely occupied by these factories. Thus the local governments felt obligated to deal with these factories, illegal dwellings and factories should be torn down according to the law. However, there were too many to deal with after a long term of acquiesced attitude from local governments and demolish all illegal constructions was no longer an option at all.

To break the deadlock and encourage community renewals, Chinese central government proposed the “Three-old” Policy (policy of renewal for old towns, old factories and old villages) in 2008 in the name of “encouraging intensive land use”. It is actually a compromise to regional reality. Accordingly, illegal construction land before June 30, 2007 can be exempted and registered as legal property only if the owner willing to pay a certain amount of fine and reconstruct the land following the zoning ordinance. Otherwise if the owner choose to sell the land, he will get a compensation with an amount of 60% of the land revenue through auction organized by local government. The policy is only permitted in the Guangdong province, which is always considered as “traditional pioneer” of reform and opening-up area of China. Encouraged by such compromise, wide-ranged community renewals started in the PRD Region since 2009.

2. Community engagement based on the “Three-old” Policy

As situation mentioned above, the policy is no longer dealing with simple technical issue of land-intensive use, but a redistribution of land vested interest. However, the land fit for renewal are mainly owned by the village collective, which make the villagers as important as the powerful government and wealthy investors. Though the constitution and land law of China define no individual owns any land, the policy implies that villagers had the rights of profit-making through land ownership, just like the local governments.

Based on Muller's theory of public choice (Mueller, Dennis C, 2003), the human society is composed of economic market and political market. Subjects of economic market are consumer (demander) and vendor (supplier). While subjects of political market are electorate,

interest group (demander) and politician (supplier). People has to make decisions on both economic market and political market. The theory further claims that, people always try their best to maximize their benefits on both markets.

In renewal projects, the local government, social investors and land owners (such as the village collective, etc.) constitute a benefits triangle. The government concerns not only economic profits but also political performance, prestige, fame and other political benefits. Based on perspective of the Development Economics (Yujiro Hayami et al, 2005), the government can be regarded as economic organization with public authority. Through renewal projects, the government seek public support for their governance and economic benefits as well. Therefore, the bottom line for local government is the benefits from politics and economy exceed the costs from political and economic risks. It also means the government trends to approve unprofitable program sometimes for political reasons.

The motivations of social investors and land owners in renewal cases are much simpler than local government. From the perspective of "Economic Man", both of them just seek maximum profits and minimum risks in the economic market. Social investors such as capital stakeholders willing to obtain reasonable return on their investment and to avoid potential risks like policy inconsistency, conflict in renewal projects, capital chain fracture and project cycle extension. Land owners such as village collectives are willing to accept the benefits like increasing of land incomes and improvement of living condition but to avoid losing their land rights easily. Land owners like village collectives always trend to choose lower risk plan in the game for their lack of information compared with the other two sides of the triangle.

Based on motivations analyzed above, the game in this triangle is the procedure of redistribution for land vested interest. The transfer of land ownership (if any), compensation for vested interest, demolition-resettlement plan and the FAR are the main issues to be negotiated in the game. If the agreement can be reached in tripartite negotiation among local government, social investors and land owners, a local development union will be formed in a renewal program (Chen Chen, Min Zhao, 2013). Then the renewal plan can be carried out for implementation, otherwise the renewal plan will have to be discarded. Moreover, if there are many "land owners", such as old village dwellings owned by villagers and factories owned by all villagers in one collective, involved in one piece of land, people should vote to decide whether a renewal will take place and which kind of renewal (or compensation) they will accept. Accordingly, the policy stipulates that if 90% of the "land owners" vote for renewal, and meanwhile the owners who vote for renewal got possession of more than 90% of the buildings on the land, the negotiation starts and renewal planning can be made. It called the "double 90" principle in the "Three-old" policy. Besides, other important decision like the type of renewal or compensation, should not implement until it pass the "double 90". So the community engagement is the most important process in every renewal case.

	ROLE	IMFORMATION	ANTICIPATION	BOTTOM LINE
Local government	Public authority	Complete	Political fame Economic Returns	political-economic risks
Capital stakeholders	Social Investors	Well-informed	Maximum Returns	Economic Cost
Village Collective	Land Owner	Incomplete	Maximum Compensation	Land Ownership

Table 1: The benefits triangle of the game for renewal projects in the PRD Region

According to the Ladder of Citizen Participation Theory (Arnstein, Sherry R, 1969), the benefits triangle has constituted a partnership when each side has the power of veto. It represents the senior phase of the citizen power in renewal projects. Therefore traditional

technical renewal planning promoted by powerful authority of government in other places of China is not suitable in this region. Renewal plan should not only propose a technical solution but also respond to all the parties of the vested interest. The voices from villagers should be considered as crucial as voices from powerful government and wealthy investors during implementation of community renewal projects. Therefore the community renewal in the PRD Region guided by the "Three-Old" Policy is widely considered as the origin of community engagement in China.

In following renewal cases of Guangzhou and Foshan, partner engagement and role of planning in policy implement will be further studied.

3. Renewal Project of Lianjiao District, Foshan

3.1 The Event of Emma Maersk

Lianjiao district became world famous for the event of international garbage shipping. According to British Sky Broadcasting Co.(BSY) In November, 2006, the Emma Maersk, one of the biggest container ship in the world, carried 15,000 TEU of garbage back to China after she shipped Christmas presents to Europe. All the garbage was shipped to Lianjiao, a small village in Dali town seated between Guangzhou and Foshan. The event was broadcasted on the SKY TV called "toxic shocked China" which described the garbage collection industry in Lianjiao. As the report had gained widespread concern at home and abroad, China Central Television(CCTV) broadcasted another program to report the situation in Lianjiao. According the report from CCTV, this district had been dealing with garbage sorting, especially plastics, for years and involving nearly a thousand small garbage companies. The annual garbage sorting capacity of Lianjiao exceeded 200,000 tons with poor technique of waste disposal. Therefore, Lianjiao was heavily polluted with toxic smoke in the air and black water in the rivers.



Figure 5: photo of garbage sorting industry in Lianjiao(2006)

3.2 The developing process of Lianjiao district

The situation in Lianjiao is a microcosm of typical rural industrialization in the PRD Region in the past 30 years. According to the research literature (Yang Lian, Yuan Qifeng, 2010), since 1980s, taking advantage of convenient transportation between Guangzhou and Foshan, the village collective gathered farmland from villagers for rent after certain land readjustment and infrastructure construction. In 1992, An industry park for garbage sorting was founded, which covered an area of 112.5ha, 70% of which belonged to Lianjiao village and the rest came from another 4 villages (Lizhong, Lidong, Yayao and Pingdi). The land was all rent by small plastic garbage collection enterprises in shabby bungalows. The total amount of rent from the park was 4 million US dollars in 2006, with an ratio increased by 20% every 3 years. Villagers were satisfied with long term incomes from the rent though they had to suffer from severe pollution. However, the local government could only get 640 thousand dollars from plastics garbage industry as the annual tax, which is one-tenth of the total from Lianjiao district. As the "Emma Maersk" incident exposed, local government considered that community renewal is imperative.

3.3 The plan of community renewal in Lianjiao district

As the fundamental of negotiation, renewal plan for Lianjiao district was proposed by the local government. It provided a future vision for the villagers and investors. According to the planning, trade business was suitable in Lianjiao district for it lies in the joint of Guangzhou and Foshan. In addition, the newly developing business center of Foshan, situated to the south of Lianjiao, trended to extend northwards. The renewal plan concluded that Lianjiao district would be a new part of Foshan city, and the renewal function would include professional trade center, wholesale markets, industry headquarters office, hotel, public services, as well as residential and leisure program.



Figure 6: Renewal planning for Lianjiao district

3.3 The negotiation and engagement for implementation of renewal

The view of renewal plan would undoubtedly bring more profit and the pollution would be controlled. Villagers also expected for more profit and better environment but they always put their ownership of the land at first place. In order to implement the renewal plan, negotiations got started and the process was noted by scholars (Yang Lian, Yuan Qifeng, 2010).

As the land rent was the income source for the villagers of Lianjiao district, villagers in Lianjiao and other 4 villagers mainly opposed to sell the land as "state-owned land". Even the estimate land value may reach 2.75 billion yuan (350 million US dollars in 2006) though auction and the villagers could get 60% (around 200 million dollars) at one time according to the "Three-old" policy. Villagers insisted on maintenance of the land ownership for long-term income. Then three models for development were further discussed with such fundamental.

- (1) MODE 1: Local government control. The local government rent all the land of 112.5 ha for 40 years (which is equal to the rental period of commercial use on state-owned land), and run all programs planned with social investors. The villagers get paid each year as rental and the land, including all buildings above will return to villagers after the rent expired in 40 years.
- (2) MODE 2: Village collective control. The village collectives carry out land readjustment according to the plan and found an incorporated company with social investors to run all programs.
- (3) MODE 3: Local government-Village collective cooperation: The government and the village collectives cooperate found an incorporated company together and share all the incomes and risks.

	MODE 1	MODE 2	MODE 3
Implement the Goal of Planning	GOOD	NORMAL	GOOD
Financial Risk of the Government	HIGH	LOW	NORMAL

Financial Risk of the Collective	LOW	HIGH	NORMAL
Possibility to Pass the "double 90" voting	HIGH	HIGH	LOW
Convenience for loan	NORMAL	NORMAL	HIGH
Convenience for Attracting investors	NORMAL	NORMAL	HIGH

Table 2: Pros and Cons of each mode.

According to the notes from scholars (Yang Lian, Yuan Qifeng, 2010)

There were pros and cons in each mode. Without the participation of the government like Mode1 and Mode3, it is less guaranteed in the Mode 2 as decisions made by villagers are relatively short-sighted and changeable. Compared with Mode 1 and 3, local government trends to choose the latter as there were some obvious defects in the former. In Mode 1, the land is rent by the government but still belonged to the collective as rural land, which means it is not easy for the government to get loan from banks without land mortgage. Moreover, real estate programs such as hotels and residencies are strictly forbidden on the rural land, which is hard to attract big investors and risk rises.

While in the Mode 3, everything seems much better. The collectives offer the land and the local government offers the finance support for construction, all the villagers and the government become stockholders in one land developing incorporated company. Meanwhile, as the land ownership transfers to the company from the collective, it is convenient for applying loan to boost cash flow. And if there is any need of converting some part of the land into state-owned in order to attract a big investor, the government can negotiate with all stockholders, the land fee through auction can flow back as investment for the company. The only need to implement the Mode 3 is pass the "double 90" voting through community engagement.

However, the Mode 3, though attractive, failed to pass the voting for two reasons. Firstly, as 70% of the land belongs to Lianjiao village, villagers in Lianjiao claims 51% of stock ownership, while villager from the other 4 villages opposed strongly against it for fear of losing voting power in the company. Two medium plans were addressed in the process of community engagement as follows: (1) Stripping the voting rights and bonus share rights from stock ownership, which allows Lianjiao village collective owns 64% of the bonus share but 49% of the voting power; (2) The government share more stockownership with more finance investment, until the stock ownership ratio of Lianjiao drop below 50%. Nevertheless, neither of the medium plans approved, villagers reached an impasse for majority ownership. Secondly, founding a company and mortgage the land for loan imply a risk of losing the land if the business runs badly to bankruptcy, which challenges the bottom line of villagers, especially villagers in Lianjiao.

The consensus was finally reached on model 1 though obvious defects can be concluded: the local government obtained the usufruct by rent the rural land, which is strictly forbidden for housing estate. Thus the government took all the risks with limited develop program. But villagers gained 4 million US dollars every year and increased by 10% every 3 years without any risk. What's more, the village collectives can get back all land and buildings above after 40 years without a cent, which seems unfair. It is not hard to come to a conclusion that the government had compromise much during the negotiation because the construction land quota is rare and the village collectives had taken the initiative. The villagers gain incomes without any efforts or risks, which would become a considerable social problem in the coming future.

Anyway, as the consensus was reached, the local development alliance was founded. The renewal project started as planned. When the first phase of the trade center was finished in 2012, the old perspective of Lianjiao district with heavy pollution and garbage everywhere was refreshed like the rebirth of phoenix.



Figure 7: The photos of implemented renewal planning in Lianjiao

4. Renewal Project of Hailongwei District , Guangzhou

4.1 The dispute of farm land quota

Hailongwei is a small island in the Pearl River, seated on the border between Guangzhou and Foshan. There are five villages on the island, with a total area of 20.5km². In a long time ,the traffic was inconvenient of Hailongwei so its development did not follow the typical rural industrialization process of the PRD Region. There were only few enterprises on rural land for manufacture. As there were many brooks on the island, it is suitable for flowers planting industry. Statistics shows that in 2010, the flower trade business in Hailongwei exceeded 2 billion yuan(300 million US dollars in 2010). Because of more incomes from planting industry than manufactures, villagers on the island were satisfied. The flower farmland and brooks were well maintained compared with nearby regions. For this reason. Guangzhou government distributed most of the farmland quota in Hailongwei Island as well, in order to exchange more constructed quota for industrial development in other places.

However, as the traffic barrier of the river was broken by tunnels and metro line, together with the sub-centers of Guangzhou and Foshan had been under construction across the river, land rent in Hailongwei rose sharply and many farmlands for flower planting were replaced by factories and housing estate. In 2012, 55% of the rural land was taken and the land quota almost ran out. There was no more farmland for rent, which means villagers' anticipation for increasing income was shattered by the quota. Of course, they were unsatisfied and even kept building illegal constructions and petitioning constantly. The government felt huge pressure from the protest against quota which can be anywhere but "NOT IN MY BACK YARD".

4.2 The renewal plan for problem solving

In order to solve the problem between land quota and explore a better way of development than rural industrialization as well, renewal plan for Hailongwei Island was proposed by local government. According to the scheme of the plan, all the farmland on the island were arranged together in space without virtually exchange of quota between farmland and construction land. The farmland quota were gathered and arranged as a whole on the southwest of the island, covered an area of 3.2 km². This farmland was planned to be the site of the World Horticultural Exposition of Guangzhou and the biggest flower trade market in Asia after the exposition. Besides, the plan further explained the whole picture of the community renewal for the island. The five villages and industry land would be renovated as a "flower island" with new functions planted in, which include flower exhibition& trade& research, ecological conservation, business office, low carbon industry and waterfront residential program.



Figure 7: The renewal planning for Hailongwei island



Figure 8: Farm land at present(L), in territorial planning(M) and readjustment by renewal planning(R)

According to the renewal plan of Hailongwei, farmland on the island were better conserved and its new role of big events brought better scenery with promising economic feedbacks. Both local government and villagers were glad to see the implementation of the plan and started to negotiate.

4.3 The negotiation for implementation and engagement of the renewal

As Hailongwei is quite near to the sub-centers of Guangzhou and Foshan, the land value is much higher than it is in Lianjiao. Based on statistics, the housing price of Hailongwei area was as high as 250 thousand yuan (4000 US dollars) per square meter in 2012. The social investors was glad to buy constructed rural land and buildings above in this area in order to exchange tremendous profit from redevelopment. Moreover, according to the "Three-old" policy, all constructions including land and buildings constructed before June 30th, 2007, are accepted as a fait accompli and villagers can get compensation through renewal projects. Some village dwellings were more than a thousand square meters and the owners can get millions of US dollars as compensation, or replaced with several new apartment as big as 100-150 m², which can be rented for long term incomes. Under such circumstance, rational villagers would sell their rural constructed land to local government, as the land became state-owned land it can be developed into real estate. The negotiations for renewal plan on the constructed rural land were mainly between villagers and investors; the government only played as supervisor to guarantee the public interest.

The farmland on Hailongwei Island, which can only be constructed as flower & exhibition & trade & research park, on the other hand, attracted no interest of social investors, the negotiation for implementation of 3.2 km² flower land is mainly between the local government and the villagers. Just like the agreements of Lianjiao Project, there were 3 models for renewal implementation: (1) government control, (2) village collective control, (3) government-village collective cooperation. Based on the factors of renewal intention, common profits, joint risks, finance convenience, the model 3 was undoubtedly the ideal choice. However, even though the villagers were eager to get higher profit from the project, they were reluctant to share risks and afraid of losing their ownership of the land through bad management of land mortgage.

Just like the renewal project of Lianjiao, the consensus was reached on model 1, the local government rent all the farmland for 20 years with a payment as much as the manufacture rent. The villagers get the incomes and take no risks at all. After the rent expired in 20 years, all the farmland and facilities above will be return to the villagers. As we concluded in former project, there was no good for the villagers to gain without any risks or efforts, however, the government had no choice but compromised to the villagers who had control of the remaining land and veto to the renewal project.

5. Summary

Extraordinary phenomenon often occurs in Chinese urban development, which western planning theories can hardly explain, such as a small fishing village named Shenzhen had developed into a metropolis with tens of millions of people just in one decade. It is rather difficult to explain the huge power of community renewals in the PRD Region when the present land law was slightly released by the "Three-old" policy. On one hand, if the value of the rural land is fully liberalized, local government in China, who rely on the revenue of state-owned land will be bankrupted. On the other hand, local government feel forced to release some of the rural land value to deal with the shortage of construction land quota. The "Three-old" policy is a compromised and progressive reform to the dilemma. Its implementation in the PRD Region as a successful experiment implies a further implementation for the whole nation in the coming future. The central government has realized defects of the land law are the reason for massive illegal constructions and no one could benefit from the deadlock, therefore the policy implies an amendment of the law in the future.

According to the renewal projects, the construction land quota is one of the rarest resource for regional development in China, so land owners such as villagers have the initiative in renewal negotiations. In order to guarantee the implementation of the renewal policy, a tripartite local development alliance including local government, social inventors and landowners should be found. The alliance reflects the three parties are peers in renewal projects rather than the government monopoly. To sum up, community renewals guided by the "Three-old" policy in the PRD Region is widely considered as the origin of community engagement in China for the power of the government is weakened and the power of village collectives is enhanced. Renewal plan should not only propose a technical solution but also respond to all the parties of the vested interest, which represents the future direction of urban planning development in China.

References: ("Harvard style" of references)

- [1] Arthur O'Sullivan (2011, 8th ed.) , Urban Economics , McGraw-Hill/Irwin.
- [2] Dennis C. Mueller. (,2003,3rd ed.) , Public Choice. Cambridge University Press.
- [3] Yujiro Hayami, Yoshihisa Godo.(2005), Development Economics: From the Poverty to the Wealth of Nations. Oxford University Press.
- [4] Arnstein, Sherry R. "A Ladder of Citizen Participation," Journal of the American Planning Association, Vol. 35, No. 4,(July 1969), pp. 216-224.
- [5] Chen Chen, Min Zhao, Hong Liu. Research on the Reconfiguration of Land Interest Pattern in the context of "Sanjiu" Reconstruction in Pearl River Delta Region and Its Operating Mechanism— The Foshan Case China, Journal of the Ancient City,2013(1):33-40.
- [6] Lian Yang, Qifeng Yuan. "Research on Patterns of Land Integration in a Context of 'Three-old' Reconstruction in Pearl River Delta Region: A Case Study of Lianjiao District in Nanhai, Foshan," Journal of Urban Planning Forum, Vol.2(March 2010),pp.14-20.

Mobilizing Social Capital in low developed rural China: a case study in the village N

Mobilizing social capital in low developed rural china: a case study in the village N

Tao Liu, Urban Planning Institute of Yunnan Province, China
Hui Zhang, Urban Planning Institute of Yunnan Province, China
Zhi An Liu, Urban Planning Institute of Yunnan Province, China

Abstract: Social capital is a non-economic concept of regional development. This concept emerged out of the thinking about the role of more intangible development factors such as institutions, networks and trust. Is it possible in China to mobilize the social capital to promote the local development and to solve public issues? The present paper is based on the investigation in the village N. The contribution presents the difficulty to mobilize the social capital and the difficulty of the participation in low developed rural China. In the end, the paper suggests that the issue to mobilize the social capital and the enthusiasm of the social members to participate the local development should be considered more in the future in China.

1. Introduction

Over the last three decades, the approaches of regional development have been experiencing profound reform. In discussions and literatures about regional development during that period, social capital is an important concept of endogenous regional growth and development (vgl. Beugelsdijk et al., 2005; Garlick et al., 2006; Elbe, 2008; Miguélez et al., 2011; Stimson et al., 2011). The most influential contribution to the discussion on the relation between social capital and economic development is the publication of Putnam et al.'s *Making Democracy Work* (1993). Putnam et al. (1993: 167) defined social capital as those, "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions".

Recently, Endogenous development is characterized by the use and enhancement of the local and regional potential through local stakeholders to solve economic and social problems. In regions where social relationships between local stakeholders are based on trust and shared values, participation in social organizations is higher and social capital is higher (Beugelsdijk 2005: 1056; vgl. Putnam 1993). Today, a number of overview papers on social capital and endogenous regional development can be found. Beugelsdijk et al. (2005: 1053) studied the development of social capital of 54 regions in Western Europe and believed: "A positive relationship exists between social capital and regional economic development". After investigation in part of the regions in Spain, Miguélez et al. (2011: 1019) confirmed that social capital correlates positively with technological innovation.

Is it possible in China to mobilize the social capital and to arouse the enthusiasm of the social members to promote the local development and to solve public issues? And is it possible based on trust and shared values to build regional networks, to promote the accomplishment of the sustainability plans in the area of economics, society and ecology?

Since the 80s of the last century, the whole society in China was experiencing a deep structural change. The policy of reform and the economic transformation were the driving forces. During this period, resources continuously gathered in urban areas. The urban territory, urban economical production mode and urban culture expanded dramatically. The population was unceasingly gathering from the rural region to the city or its neighboring region. The disparity between the urban and rural areas is getting bigger. According to the sample investigation from the Chinese National Bureau of Statistics in May of 2013, the

amount of migrant workers was beyond 262 millions (People`s Newspaper: 28.05.2013). The 12th five-year plan issued in 2011 has expressed the development plan of the Chinese economics and the society from 2011 to 2015. In 2015 the gross domestic product (GDP) of China is expected to be 55,800 billion Chinese yuan. The urbanization rate will be 51.5% with the annual growth rate of 0.8%. In addition, in 2015 the expect average per-capita disposable income of the urban residents^[1] will be 26,810 Chinese yuan, and the expect average per-capita net income of the rural communities^[2] will be 8,310 Chinese yuan, both are increased by 7% based on the amount in 2010. (People`s Newspaper: 14.03.2011)

This work is based on a four-year study between China and Germany. Within this period, network resources of the several major literature centers were retrieved, government officers and experts from academic institutes^[3] were interviewed, 18 administrative villages in Yunnan Province were visited. Based on investigation in village N and communication with local residents, the article presents the difficulty in mobilizing social capital to participate in local area development and public affairs in low developed rural China. All the evidence in the present paper is based on the field works by the authors during the period of October 2008 to July 2012.

2. Methodology

The method of the present investigation in N village is the concept of action research. Action research originated from the study in social psychology. After several generations of researchers, the methods of action research are fanned out into a variety of research areas. Today, it is used especially in the interdisciplinary projects to study the social spaces. Hart and Bond (2001: 33) emphasized: The revival of the interest in action research derive from the criticism for positivist approaches in social sciences area, as well as the defects in a large part of organization theories in solving practical problems.

The location to accomplish the investigation is the village N. The village N is one political village, located in the southwestern part of China. In terms of the administrative division, the village N belongs to the H xiang (town) in Z xian (county), which is located in the Da Li Zhou (region) of Yunan Province^[4].

According to the information from the government in 2008, it is a total of 592 poverty counties in China. Among them, 257 poverty counties are located in minority areas. The Yunnan Province has the most poverty counties (73 poverty counties). Z County is a poverty county in China. The disposable income of the county government is merely 120 to 130 million Chinese yuan. In history, the village N was flourishing because of the well rock salt. Today lots of historic buildings including one salt well are kept in the village. The government of the Z County is planning to promote tourism of the village N in the following years. In an interview in the April of 2010, the director of the County tourism bureau said that there was little interest in supporting county government plan to promote the development of tourism in village N.

The main tools to communicate with residents in the investigation were interview, questionnaire and residents meeting. The significant meaning of the investigation is to support the development plan of the local government and try to arouse the enthusiasm of the village members; On the other hand, it provides the empirical data to extend the further researches.

3. The investigation in the village N

Based on the visit to 18 administrative villages, village N was chosen for the investigation. The residents in the village N are Bai nationality with the population of 2,190. According to the publicity from the village committee (at 13.03.2011), the per-capita net income in 2009

was 2,087 Chinese yuan (around 240 Euro). The village N was formed because of salt 2100 years ago in the Han-Dynasty. Currently a great amount historic buildings are kept, which belong to the residents in the village. Those buildings are today the personal property of the villagers in law. On 09.06.2007, the village N was awarded the “Chinese Historic Culture Village^[5]”. The government of Z County is planning to build the village N as the tourist destination in the following years, in order to promote the tourism development in the whole region.

3.1 Difficulty in protecting historic buildings

During the visit in that county, the leader of the local Communist Party Committee (at 23.04.2011) and the director of the county tourism bureau (at 02.05.2011) said that: “The Z County is located in the southwestern of China. Under bad economical situation its government has limited ability. Since the village N is a minority village and has a great amount of historic buildings, the county government decides to concentrate the limited financial resource to develop the village N as one tourism one. In this case, it can build on the one hand a development driver of the tourism in the region; On the other hand, it can promote the economical development of the Z County and improve the income of the people.” In 09.06.2007, the village N won the award of “Chinese Historic Culture Village”.

In order to protect the historic buildings and maintain the village appearance, the local government decided that the historic buildings have to be repaired and maintained complying with the rule 'Xiu Jiu Ru Jiu'. Therefore, the residents in the village must use the original construction material to repair and maintain the buildings. The original materials are clay soil and woods of Pinus trees.

Currently, the interest of the villagers to develop the tourism is little, which results in the difficulty to protect the historic buildings and the village appearance. A part of residents are applying the modern construction materials to rebuild the original buildings. According to the statistics of the authors, there are already 27 buildings which are rebuilt or finished repairing. In order to restrict the rebuilding behavior of residents, one working group is set up by the local government. However, the buildings are personal property of residents, the working group failed.

3.2 Results of questionnaire

The questionnaire is one important part of the investigation. The questions are closed questions. The planned distribution of questionnaires is the free distribution. Theoretically every villager should be able to get one questionnaire. After filling in the questionnaire, the villagers should send back it voluntarily. However, the practice in village N showed that the free distribution and collection can't get a trustworthy results. The villagers do not answer the questions from the questionnaire voluntarily.

Therefore, the final manner is to visit every family and ask the questions from the questionnaire. Since it is random to choose the family, some residents were outside and can not answer it. In the end, the total amount of families who received the questionnaire is 307. That is 71.1% of all village families. The total amount of respondents is 1483. That is 67.7% of all residents. The age of the respondents distributes mainly between 31 to 60 years old. That is 73% of all respondents.

There are 29 questions in the list. Among those questions, 9 questions relate to the social live situation of villagers, 8 questions have the connection with the economical problems and 10 questions are about the joint activities and social development. In addition, there are two supplementary questions.

Question content	Selection sorts	Percent on the total respondents
Level of education	primary	43.0%
	junior middle	39.9%
	high school	14.2%
	higher	2.9%
Medical insurance		100% insured
Pension insurance		0% insured
Migrant worker in family		75.2% (at least one member of the family)
Economic tasks from government		0%
Help each other in village		93.1% help each other

Table 1: Some basic situations in the village N

Table 1 describes some results in the village N. Most of residents in the village N accept the primary and junior middle educations. In the 75.2% surveyed families, at least one family member was working outside as migrant worker. As talking about this problem, the villager head (at 02.05.2011) said that 185 villagers have been working outside for a long time (more than one year). In addition, 93.1% of the villagers often help each other. The relatives and friends are the main source of the help.

In the village N, the annual gross income less than 4000 Chinese yuan (about 480 Euro) of the family denotes the lowest level (22%, 63 from 287 interviewed families). There are 98 families with the percent of 34.1% whose gross income of one year is from 8001 to 15000 Chinese yuan. 23 families with the percent of 8% have the highest gross income which is over 25001 Chinese yuan. In addition to agricultural production, the most village families engaged more activities in variety productions. The Production activities are comprised of forestry (227 families), livestock farming (156 families), transportation (34 families), tourism (17 families) and guesthouse (6 families) etc.

As discussing the attitude to the tourism development, 16.7% interviewed villagers though that they can benefit from this activity; 36.1% stated that they are not benefiting from it. 22.3% indicated they will not benefit from it. During the questionnaire, the villagers H1, H2, H3, H4, H5, X1, X2, Y1, Y2 and Y3 supplement that: "The tourism development is the business of the government. Only the government can benefit it from the tourism development."

3.3 Results of the residents meeting and interview

The residents meeting and interview are another part of the investigation in the village N. During the investigation, one found that it is so difficult to hold the residents meeting. The enthusiasm of the villagers to participate the meeting is low. According to the document of the investigation, 69 residents (inclusive the head of villager) proposed the doubt: "whether participating the residents meeting can solve the current problems of villagers and in the village". During the interview, the villager Y2 talked about his troubles (at 27.04.2011): Y2 had very active attitude to plant the walnut and initialized the work four years ago. Two years later, the local government has ever organized the villagers to plant the walnut and provide 260 Chinese yuan pro mu^[6] each year to every family as the financial support. However, Y2 could not get the financial support, because he planted the walnut outside the assigned area of the government. Therefore, Y2 did not satisfy with it and thought that the local government should give award to the villagers who are good at planting, rather than simply setting the area. Y2 stated that he will participate it if the residents meeting can solve his problem.

In the past two years, 7 meetings were hold in the N village. Five meetings in seven were hold for the particular group of residents. Only two meetings were carried out for all villagers.

During the interview, the head of villager (at 02.05.2011) believed that: “It is so hard to communicate with villagers in the residents meeting. Most villagers do not believe that it is possible to solve the problems through the residents meeting.” He suggests: “10 Chinese yuan should be given to each resident as the manner of the economic reward, if it is very necessary to take the residents meeting in the investigation, so that the residents will come happily.” In the end, the head of villager emphasized that: “It is not straightforward to carry out the work in the village. We have to consider both the task from the government and the real needs from the villagers.”

In terms of the situation that a part of villagers repair the buildings with modern material, some villagers said that: “Since the old buildings were not repaired for a long time, so that it affect the living function of those buildings.” In the viewpoint of the villagers, the buildings must be repaired and the living function must be recovered. The original construction materials, such as woods, are easily degraded. They should be changed in 10 to 20 years. In addition, the forest protection strategy of the government results in the increase of the price of woods. Compared with tile and brick, the woods are cost higher.

As saying the plan of tourism development, the villager H7 said that: “I can borrow 20,000 Chinese yuan to improve the quality of guest rooms in my house. However the reality in Z County is that only the government can decide how to develop the tourism. After all, borrowing money from the bank is something to undertake risk. If the government changes the idea, my loss will be very large. Therefore, it is the wise decision to wait and see.” This idea is supported by the residents H8 and Y4, who are managing restaurants in the village.

4. Important results from index works and expert interviews

This work is based on a four-year study. Within this period, network resources of the several major literature centers were retrieved, government officers and experts from academic institutes were interviewed. In this part of the paper, two important results from index works and expert interviews are shown.

Firstly, in current international discussions and literatures about regional development, social capital is an important concept of endogenous regional development (vgl. Beugelsdijk et al. 2005, Garlick et al. 2006, Miguélez et al. 2011, Stimson et al. 2011). Stimson et al. (2006:35) pointed out: “*Structural agglomeration, regional innovation systems, institutional thickness, organization power and control, enterprise segmentation and social capital are the key concepts of the contemporary regional development literature.*” Additionally the authors emphasized: “... and which are embedded in the increasingly important discussion of institutions and endogenous regional growth and development...”

By analyzing the index results from the network resources of several important academic literature centers^[7] in China, a number of papers on participation can be found. Between 2001 and 2010 Chinese scholars have carried out a great amount of investigations on the participation, but fewer contributions to the endogenous development. Moreover, the similar results according to the index results from the network resources of National Science and Technology Library (NSTL) can be obtained. Among the obtained index results, one can get 37,711 items about “Participation”, 4,402 items about “Social Capital” and only 11 items about “Endogenous Development”.

The results from index works are shown that the most Chinese scholars do not understand the significance of the “Endogenous Development”. In the obtained Chinese literatures, “Endogenous Development” is a new development model in comparison with the exogenous development model (vgl. Zhang et al., 2008; Wang et al., 2009; Zhou et al., 2009). Some scholars (Zhang et al., 2007: 65) beliefs that “Endogenous Development” is a new theory in the field of sociology and compared it with endogenous growth theory in the field of economics (see Table 2).

	Endogenous development Theory	Endogenous growth Theory
Use areas	low developed regions, especially rural areas	developed regions
Disciplines	sociology, anthropology, cultural studies	economics
Focus	sustainable development	promote economic development by endogenous technical improvement

Table 2: The comparison between the “endogenous development theory” and endogenous growth theory (Be translated from Zhang et al., 2007: 65).

Secondly, in the planned economy era, the power of the politics, the finance and the decision-making was in China highly concentrated. With the transformation from the planned economy to the market economy, the power of the financial payment and decision-making regarding local affairs was transferred from the central government to the local government (vgl. Chung, 1999; Qi, 1999; Liu et al., 2006). It formed a Center-Local-Government-Relationship, which indicates that the power of politics and financial incoming is controlled by the central government, and the local affairs and financial payment can be managed by the local governments. In this period, the difficulty of improving local governance in China has aroused a great deal of attention from academics. On the one hand, in order to obtain more the political and financial support from the central government, local governments need accomplishing the “top down” plans and tasks from the central. On the other hand, following the decentralization of the financial and decision-making structure, the local governments have more responsibilities and play a significant role in the solution of the local needs.

After the study of the local governance reform in China, Liu et al. (2006: 29) pointed out: *“local government official have tended to be more responsive to the party and to higher-level government policies than they are to local needs. There officials are, after all, controlled from above both by tight hierarchical personnel arrangements and by fiscal transfer arrangements. Local governments in many regions are usually more interested in various show case projects that cater to upper-level governments rather than local tastes.”*

Additionally, Liu et al (2006.29) analyzed the current problems and emphasized: *“On the one hand, the center understands that local government officials, who are appointed from above and lack accountability to local people, have a tendency to stray from good governance practices; on the other hand, fearing that uncontrolled elections could gravely weaken the center’s ability to enforce its policies and even destroy the Party’s power base, the center has no strong desire to promote popular elections at local levels.”*

5. Conclusions

This paper was initialized by arguing the issue in the period of the reform and opening-up in China. In such a period, the plan economics was transferred to the market economics. The disparity between the rural and urban areas was increased and the residents were gathering from the rural to the urban areas. Accompanied by the transformation of power from the central government to local governments, the difficulty of improving local governance has aroused a great deal of attentions in China. Under this condition, the question is whether it can be mobilized the social capital, aroused the enthusiasm of the social members and based on trust and shared values to build regional networks in China? Based on the index works to several main literature center, the interviews with several experts in government department and academic institutes, the visits to 18 villages and the deep investigation in the

village N, the paper presents the difficulty to mobilize the social capital and the difficulty of the participation in low developed rural China.

Finally three points are concluded to predict the difficulty that China is confronting in this contribution:

- a) The index results of the network resources of some important academic literature centers in China described that there are more researches to “Participation” and “Social Capital”, but rare researches to “Endogenous Development”. Among the obtained index results from the network resources of National Science and Technology Library (NSTL), only 11 items about “Endogenous Development” could be found. Therefore, the contribution suggests that the significance to mobilize the social capital and to arouse the enthusiasm of the social members can't be understood in China, if the people do not understand the significance of the “Endogenous Development”.
- b) It is more difficult in China to improve the local governance especially in the low developed regions due to the existing Center-Local-Government-Relationship. The case in the village N showed that the decentralization is not just about the mechanics of government structures and funding, but also about changing relationships and norms.
- c) Combining above two reasons, the governments in low developed rural China have neither enough understandings, nor enough enthusiasm to mobilize the social members in participating local development and in solving public issues. They also do not have enough enthusiasm based on trust and shared values to build the social relationships. Taking the investigation in the N village as an example, the local government is applying for the award “Chinese culture village.” Only the local government made the effort to apply for it, rather than encouraging the villagers to be involved it. After that, the local government announced the rule of “xiu jiu ru jiu” to keep the village appearance, without the negotiation with the villagers. Eventually, the villagers have the negative attitude to the tourism development of the government. Some villagers said that the tourism development is the business of the government and only the government can benefit from the tourism development. In all, without the support and understanding of the government, it is pretty hard to mobilize the social capital and to arouse the enthusiasm of the social members.

Through the investigation it also shows that some villagers are willing to loan the money from the bank to support the tourism development in the village N. However, taking the consideration of the personal risk, they take the wait-and-see attitude. Those potentials from the public members should be mobilized. In the end, the paper suggests that the issue to mobilize the social capital and the enthusiasm of the social members to participate the local development and public issues should be considered more in the future in China.

Endnotes:

^[1]the balance of the personal income after deduction of various taxes and fees to the government.

^[2]the sum of the personal income from various sources excluding production costs.

^[3]from the Yunnan Development and Reform Commission, the Yunnan Academy of Social Science, the Yunnan urban rural planning and design institute, the Yunnan University, the Kunming University of Technology, the Yunnan Normal University and the Yunnan Agricultural University.

^[4]Currently, Chinese administrative hierarchy is divided into: province, zhou (region), xian (county), xiang (town), political village and natural village. Which, according to the Law of the rural Residents Committee Organization of China in 2010, the political villages and the natural villages are autonomous.

^[5]“Chinese Historic Culture Village” is organized by the Chinese Ministry of Construction and the State Administration of Cultural Heritage. The village can fully reflect the some historical period traditional style and local ethnic characteristics.

^[6]Mu is a traditional unit of area measurement in China, approximately 0.0667 hectare.

^[7]CNKI (Chinese National Knowledge Infrastructure), WEIPU and WANFANG were searched. Keywords were searched in Chinese.

References:

Beugelsdijk, S. and Schaik, T. V. (2005): Differences in Social Capital between 54 Western European Regions. *Regional Studies*, Vol. 39.8, pp. 1053–1064, November 2005

Chung, J. H. (1999): Recipes for Development in Post – Mao Chinese Cities. Themes and Variations. pp. 1 – 17 in *Cities in China: Recipes for Economic Development in the Reform Era*, edited by Jae Ho Chung. London and New York: Routledge.

Elbe, S. (Hrsg.) (2008): Rural-Urban Cooperation and Politic Integration for rural areas: central results and recommendations of the supporting research Regionen Aktiv 2007 bis 2008. Aachen: Shaker Verlag.

Hart, E. and Bond, M. (2001): *Aktionsforschung: Handbuch für Pflege-, Gesundheits- und Sozialberufe*. Bern: Aus dem Englischen von Klemens Felden. Bern: Verlag Hans Huber.

How can be achieved the 24 indicators in the “twelfth five-year plan”. *People’s Newspaper*, the special issue for the Two Conferences, 14.03.2011.

Liu, M., Song, B. and Tao, R. (2006): Perspective on Local Governance Reform in China. *China & World Economy* / 16 – 31, Vol. 14, No. 2.

Macias, T. and Nelson, E. (2011): A Social Capital Basis for Environmental Concern: Evidence from Northern New England. *Rural Sociology* 76(4), pp. 562–581.

Migrantworkers are in China more than 260 millions. *People’s Newspaper*, National Monitoring Investigation of Migrant Workers 2012, 28.05.2013.

Miguélez, E., Moreno, R. and Arti’s, M. (2011): Does Social Capital Reinforce Technological Inputs in the Creation of Knowledge? Evidence from the Spanish Regions. *Regional Studies*, Vol. 45.8, pp. 1019–1038, September 2011.

Putnam, R., Leonardi, R. and Nanetti, R. Y. (1993): *Making Democracy Work*. Princeton: Princeton University Press, NJ.

Qi, J. (1999): *Rural China Takes Off: Institutional Foundations of Economic Reform*. University of California Press.

Statistical Yearbook of China 2011. Beijing: Chinese National Bureau of Statistics, 2011.

Stimson, R., Stough, R. R. and Nijkamp, P. (2011): *Endogenous Regional Development: Perspectives, Measurement and Empirical Investigation*. Cheltenham: Edward Elgar Publishing.

Stimson, R., Stough, R. R. and Roberts, H. B. (2006): *Regional Economic Development: Analysis and Planning Strategy*. Second Edition. Berlin Heidelberg: Springer-Verlag.

The Law of the rural Residents Committee Organization of China / 《中华人民共和国村民委员会组织法》. The No. ninth President Order of the people’s Republic of China / 中华人民共和国主席令第九号, 1998 年 11 月 4 日第九届全国人民代表大会常务委员会第五次会议通过. 2010 年 10 月 28 日第十一届全国人民代表大会常务委员会第十七次会议修订.

Wang, Z. G. and Huang, Q. (2009): The development of the endogenous development model – a multidisciplinary investigation. In: Teaching and Research/《教学与研究》, 2009 年第 3 期.

Zhang, H. Z., Huang, C. C. and Zhou, Y. G. (2007): A Review of the Endogenous Development. In: Academic Journal of Zhejiang University/《浙江大学学报》(人文社会科学版) 第 37 卷 第 2 期. 2007 年 3 月.

Zhang, H. Z., Zhou, Y. G., Wei, H. Y. and Huang, C. C. (2008): A empirical research of endogenous tourism development model, based on the actor networks. In: Journal of Tourism/《旅游学刊》第 23 卷 2008 年第 2 期.

Zhou, Y. G., Jiang, J. J. and Wang, X. P. (2009): A research of endogenous tourism development model, based on the municipal leadership. In: Tourism Science/《旅游科学》2009 年 8 月第 23 卷第 4 期.

Spurring the community involvement in planning - lessons from post-socialist cities

Piotr Lorens*, Dorota Kamrowska-Zaluska*

*Gdansk University of Technology, Poland

Community involvement in planning in the case of post-socialist cities was until recently almost non-existent. But in recent years the development of demand more public participation is dramatically increasing. This phenomenon creates a need for new types of planning tools, as well as an introduction of innovative techniques of conducting the community dialogue.

"Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody." - Jane Jacobs

Introduction

Public participation and community involvement in planning processes is – in general – not a new topic for contemporary planners. But in many parts of the world – including the post-socialist countries– we can still face the lack of understanding of importance of proper community involvement in planning and development processes. The situation in these countries is significantly different from both the highly-developed countries (where we can observe many forms of participation and the need for this is in principle commonly accepted by all stakeholders) and the developing ones (where the key issues are frequently associated with providing basic infrastructure or upgrading the very unprivileged areas).

Post-socialist countries

The post-socialist countries are frequently regarded as relatively well developed and can be characterized as “rich” from the perspective of many others, but in fact they are still on the fast track on the way towards redevelopment of their urban structures. This is accompanied by rapid and frequently disordered urbanization, which is happening in the realities of “liberal model” of spatial development.

In the last few years Poland has gone a long way from centrally planned economy to decentralized governance, where the planning power stays within communities. This is also the case of public participation, in the 80-ies the process was nearly non-existent. It is the law of 1994 on Spatial Planning, which gave residents not only an opportunity to articulate their legitimate interests, but also a number of legal institutions to claim settlement and solve conflicts caused by different interest of the stakeholders. It was an important step towards legal sanction in the field of planning and land use planning typical of a developing democracy. It also gave the basis for the participation of citizens in making public decisions (Siemiński 2007).

In 2004, with the new Law on Spatial Planning, real development of participation procedures begun in Poland. The participation process requirements accelerated due to adaption to the

requirements of European Union, starting with environmental procedures such as environmental impact assessments and then spreading into other aspects of urban development e.g. urban regeneration.

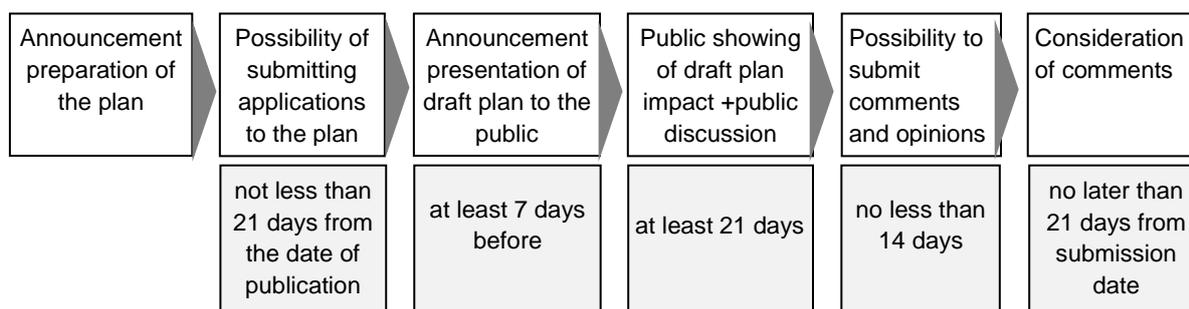


Fig. 1 Phases of participation in preparation of local development plan in Poland

Public participation in the planning procedure is one of the key elements of planning and public consultation, which could effectively support the process of making the right decisions. According to the Polish Law on Spatial Planning and Development the main purpose of public participation in the planning procedure is: to inform about the preparation of the new development plans or the revision of existing ones, to receive proposals or comments from all the actors of the process, to take them into account or to reject them. This process, if conducted properly, should also prevent conflicts and protests. The main steps of this process are:

- submission of proposals for a masterplan and a local development plan (two main tools of spatial planning in Poland)
- public hearing and discussion on the solutions adopted by the draft masterplan or development plan;
- possibility to submit comments and opinions to the draft masterplan or development plan;

This process, though a big step forward, does not always work. Possibility of public intervention happens too late. All the actors of the development process can submit their comments and opinions only after the plan is already approved by all administrative bodies, such as environmental and health departments, as well as heritage conservation office on both local and regional level. As this process is lengthy (takes at least 3 month) it's not surprising that authors of the plan are not willing to incorporate changes proposed by the public and go through the approval procedure again. At the beginning of the process participation possibility is limited only to the submission of proposals, which could be taken into account or not without any explanation, while it would be much more useful to introduce the public discussion at the stage of programming and setting project objectives. This tool was introduced for example in France, by new Law in year 2000. At the stage of setting project objectives for planning documents such as *schéma de cohérence territoriale* and *plan local d'urbanisme* there is a whole process of public consultation, which often includes workshops, public hearing surveys etc.

Beyond the statutory process of participation in Poland

At the same time the local communities are becoming interested in the development process and are looking forward to being accepted as equal or even key partners by other stakeholders. This does not advance the ability of discussing the problems and dilemmas of

spatial development - and this is both the problem of local municipalities, interested in local communities and other stakeholders –i.e. developers and investors. Therefore, we have to face the situation in which the partners are not ready to discuss the development and planning issues, which partly stems from the present liberal paradigm and partly from the lack of conducting the public discourse in general.

In this case planners have to take the leading role in the process and come forth with the innovative – at least in post-soviet realities – planning tools and techniques, allowing the introduction of public participation process in a way acceptable for all key stakeholders. One of these tools are the “planning workshops”, similar to known in the highly developed countries “charrettes”, which allow for the discussion of the PROBLEM and which prevents jumping directly to the discussion of pros and cons of some proposed solutions (which usually are unacceptable for some of the partners/stakeholders) and – in result – prevent unnecessary miscommunication and sometimes even public quarrels.

Participation in praxis

This part of paper shows two examples of non-statutory participation process in Poland. The first one took place in 2008 and the second just finished last year. These two cases show evolution in the public participation in planning in Poland. The first was initiated by local authorities, though there was deep involvement of the majority of key actors of the process. The second is a bottom–up initiative led by local NGO, where public authorities were invited to take part in the process. Of course in both cases the situation is different and there are still such participation processes led by the public sector, but this kind of activity of urban movement is a new phenomenon in Poland. Local neighborhood associations were always present, but their organizational skills and capacities to conduct participatory planning process increased significantly in the last decade. It is partly caused by the development of further forms of grants for NGO financed by European Union or private foundations (like in a case of second project described below), which is new for post-soviet countries.

The first project is revitalization of the downtown of city of Starogard. In 2008 the Local Regeneration Program for Starogard for the years 2008-2013 was introduced. The aim of the Program was a comprehensive transformation of the historic center of Starogard. At the same time, the program define overarching objectives and specific actions to be undertaken for each of the analyzed areas. Even though this general document was very important, it was not the end of the planning process. Consequently, after the acceptance of the document the city decided to continue its planning efforts to prepare the first actions of the implementation phase. The most important part was comprehensive preparation of the revitalization of the main market square in downtown.

The work formula for this project was a mixture of expert and collaborative approach. This kind of approach was needed while end result of the project was a comprehensive design documentation, which could be presented to the regional authorities, as part of a revitalization grant documentation. Because of the nature of the task, most of the work was carried out by a design team. However, due to the large community of interest in the shape of system of public spaces and development of the main plaza, an extended part of this work was done during public workshop prepared and carried out by a team from the Department of Architecture of Gdansk University of Technology.

Finally, four workshop meetings were scheduled, followed by a final presentation of the development of the proposed solution for the Market Square. In September 2008, there was a first workshop on selection of variant of road communication, followed by a discussion about the system of public spaces. At the beginning of October 2008, the next workshop focused on discussion on system of public spaces and the functional structure of the Old Town. During that month, there was a third workshop, where a physical plan of public space was being discussed, as well as the formulation of proposals for the project. The last workshop meeting was focused on details of the revitalization of downtown of Starogard. A presentation of the final version of the study took place in December 2008. A study fully adopted the findings of the workshop meetings. A strong point of this study was the participatory method, with the direct engagement of local communities and most of key institutional partners. All decisions were made by consensus during the meetings, where nearly 60 representatives of different stakeholder were present.

The second project is Centrum Reaktywacja, defined by its authors as “an attempt to develop in participatory mode a coherent and comprehensive vision of the historic city center of Gdansk”. It was implemented in 2012 by the Gdansk Agglomeration Development Forum (local NGO) in collaboration with the Institute for Urban Culture, Gdansk University of Technology and the Society Polish Town Planners. Preparation and implementation of the project was supported by the Stefan Batory Foundation.



Fig. 2 A photography from one of the workshops of Centrum Reaktywacja project

The project aimed to develop common vision for the area, both for the local community and all other stakeholders, which would allow the achievement of social consensus for downtown developments in Gdansk. This project should help to minimize conflicts between the actors of development and to increase public participation in the planning process. The project team

also hopes that proposals developed during workshop meeting could be incorporated into local development plans and be used in the formulation of other urban policies for the area. Their wish is that the success of the project will encourage municipal authorities to open public discussion on directions development of other areas of Gdansk. The third goal is to develop know-how for local officials and local NGO to conduct similar projects in the future.

The project was implemented through building a platform for discussion of shaping present directions of city development. Invited inhabitants of the city formed a civil forum for dialogue. By taking part in a series of workshops with other stakeholder of development process as well as specialists in the field of urban planning, architecture, landscape architecture, social sciences, they developed the key elements of the final document - the study of the development of the district



Fig. 3 A photography from the final conference Centrum Reaktywacja

Using the method of "charrette" allows for a dialogue between different interest groups before creating the situation of conflict, thereby minimizing the risk of its occurrence at a later stage of the development processes. It was based on the preparation, carrying out and conclusions of a series of workshops. Each of them had a clearly defined goal, a method of conducting and expected results. All the work has been prepared so as to achieve the aforementioned objective (Lorens, Nowik 2013).

While the project was prepared, organizers expected between 50-70 participants, whereas in reality more than 140 people attended the workshops. In the case of high-frequency workshops, they were carried out in subgroups and then the results synthesized during plenary sessions. Due to the open nature of the meetings, there was a natural rotation of the

participants, especially during the meetings related to the various specific areas in downtown.

Conclusions

The changes in the relationship between rulers and ruled that the Polish society underwent (and other post soviet-countries – authors comment) are very rapid (Pawłowska 2012). With time a development of community involvement can be observed. In the last twenty years public participation evolved from individual avant-garde actions to becoming a part of statutory process of planning. Today's approach still has some weaknesses, such as involving the community into real discussion only at the end of the planning procedure. It is also not applicable for all the situations, as not all of the development is limited to drawing up a development plan. This is the case of both processes analyzed in this paper. Both of them also use the method of "planning workshops", similar to "charrettes", used in participation practice of many developed countries, a tool so far applied only to a small extent to the construction of urban development policy in Poland.

The abovementioned evolution of approach can also be seen as a stronger involvement of urban movements. Though public bodies, specially local authorities with their planning power, are still important actors of the development, there are more and more cases where public involvement process is led by third sector organizations. This situation is possible due to new ways of financing and increasing organizational capacity of local NGOs. Very often, the planning process is just the first step of using participatory methods, but with time they are applied to other forms of participatory democracy, such as participatory budgeting which is a rising concept in many post-socialistic cities.

Bibliography:

Healey P., 1997, *Collaborative Planning: Shaping Places in Fragmented Societies*, University of British, Columbia 1997

Lorens P., 2008. *Studium Ukształtowania Systemu Przestrzeni Publicznych Rejonu Starego Miasta w Starogardzie Gdańskim*, Gdańsk
<http://www.starogard.pl/bindata/documents/DOC183f57a142682757bc0c4acde469747e.pdf>

Lorens P., Nowik W., 2013, *Raport końcowy podsumowujący warsztaty prowadzone w ramach projektu „Centrum – Reaktywacja”*, <http://centrumreaktywacja.pl/>

Pawłowska K., 2012, *Partycypacja społeczna w podejmowaniu decyzji dotyczących przyrody w mieście, Zrównoważony Rozwój — Zastosowania nr 3*

Siemiński W., 2007. *Cele i zasady partycypacji społecznej w planowaniu przestrzennym – przegląd literatury*, *Człowiek i Środowisko* 31 (1-2), s. 37-59

Main Title

`Insurgent Planning` in Durban; An investigation on the proliferation of religious sites for the Nazareth Baptist Church

Koyi MCHUNU, University of Natal (Durban), South Africa

Abstract

This paper discusses `insurgent planning` as relevant approach to planning practice, then applies it to the city of Durban in an attempt to shed light on the proliferation of religious sites of the Nazareth Baptist Church. The paper seeks to make a contribution to a growing body of literature on critical urban studies by drawing attention to other ways of conceiving and engaging space in the city. Arguing that predominant planning theories are inadequate to account for the diversity of urban experiences, the paper explores alternative theoretical frameworks that speak more eloquently to contemporary issues, more especially in contexts that are increasingly marked by diversity, difference, informality, marginality, and `otherness`. These theoretical frameworks foreground these issues as constitutive of being (in the city), and as contributions to the collective reimagining of the city. The paper discusses how such a planning approach could improve theory, pedagogy, and planning practice.

1. Introduction

Cities in South African are going through a process of unprecedented social and spatial transformation following the ushering of a more democratic political dispensation almost two decades ago. Urban Planners and other built environment professionals are at the forefront of trying to generate an understanding of the processes that continue to shape current cities in Africa, and to use that understanding to inform Planning Theory and meaningful practice (Dewar et al 2013, Murray 2004, Harrison 1996, Simone 2004, Mangcu et al 2003). This research represents an endeavor at contributing to this rejuvenated theoretical space of critical Urban Studies.

The paper investigates and documents an instance of `insurgent planning` in the city of Durban involving the proliferation of religious sites that belongs to the Shembe Church. `Insurgent planning` ingrains existing but hitherto officially unacknowledged land uses, and/or introduces new identities and practices into the city's urban-scape. While this serves to empower ordinary citizens, it also parodies the official disciplining rational use of space. Such urban narratives are too often ignored in the process of official space making and therefore suggest other ways of being in the city.

The research draws inspiration from a well-trodden path of researchers on `unconventional` uses of space that challenges the predominant notions of space-making. It is foreshadowed, for example, in the pioneering work of de Certeau's (1984) flaneurism along Parisian street; Sandercock's (1998) writings on the challenge of multiculturalism to the (Australian) planning system, and perhaps more recently, Ameel et al's (2012) research on Parkour in Finnish cities, to name a few.

The purpose of the paper is to make a contribution to a growing body of literature on critical urban studies by drawing attention to other ways of conceiving and engaging space in the city. The paper investigates and documents the extent of the Shembe religious sites; describes the process involved with `establishing` the sites; discusses site design and maintenance; and deliberates on how the site is utilized; all with the view to informing public policy/practice, planning theory, and pedagogy. Concepts such as mis-use of space (Mchunu 2006) and loose space (Franck et al, 2007) are deployed as tools for analysis. Both concepts describe the pervasive phenomenon concerning the use of urban spaces contrary to what they were intended or against their zoning designations.

The research relied on both primary and secondary sources of data. In-depth interviews were conducted with key informants. Photographs, and site visits were also sources of primary data. Secondary sources concerning the historical and recent media reports were obtained from the internet.

To begin to think of ways and means of addressing this and perhaps similar challenges, it may be necessary to situate the discussion within the broader political, social, and economic forces that are shaping Durban as a city. Equally important is to try and shed some light on the Shembe Church, including their cosmology.

2. Reimagining Spaces in the City

Around the world new ways of being in the city are emerging, instances of `insurgent planning` abound. Ameel and Tani's (2012:17) discussion of the phenomenon of Parkour in Finnish cities as `new way of movement that challenges conceptions of acceptable or appropriate behavior in urban public space` provides another case in point. They argue that the practice does not `follow the conventional regulations of space and its intended use....they are able to draw their own maps, imposing them on the normal restrictions and codes of behavior' (ibid, 19).

In 2005, I documented the need for spaces to practice initiation among the Xhosa speaking peoples in Cape Town, South Africa. Upon reaching a certain age, boys undergo a process of initiation into manhood which involves prolonged stays in the bush during which, among other things, they are circumcised as a rite of passage into manhood. Communities were forced to improvise as a way out of the impasse as these spaces were not provided for in official plans.

There is also the phenomenon of `street memorials` (Ojo-Aromokudu and Mchunu 2013), which involves the laying of wreaths and crucifixes on sites of fatal road accidents. Franck and Stevens' (2007) introduced the concept of `loose space` as a framework for analyzing such practices.

These studies echo Lefebvre's (1991) notion of space as socially produced through and from the human body. They are also anticipated in de Certeau's (1984) ground-breaking work on flaneurism, which through relaxed strolling along the Parisian streets made the tightly controlled rhythms of the city visible. In a sense flaneurs provided a critique of the strict rules of urban life. The use of space by the Sheme Church needs to be also understood in this

context of this increasing phenomenon of informal use of urban space for activities other than what it was intended.

3. The Legacy of Past Planning

Faced with the demands for diversity and difference, the fabric of the modern city continues to lose its relevance and meaning to the lived experiences of many urban dwellers. Its ensemble of buildings and spaces are confronted with an amalgam of aspirations, imaginations, and social practices that transcend current paradigms that informed its conception. It seems as though from inception, the socio-economic arrangements and the logistics of `belonging` and becoming have proven to be difficult to read for modern planners and decision makers.

It is also becoming increasingly doubtful that local government is a legitimate locus for decision-making and implementation of an inclusive vision of the city. This stems from the perceived halting intervention of the local authority in shaping the city. The means may not yet be at hand to respond to the challenges of a postmodern present (Mabin 1995), whose pace and character of developments demand new and innovative methods.

There is also the issue with past planning practice that has also been discussed extensively in planning literature (Muller 1982 and 1995, Laburn-Pearl 1991 and 1998, Parnell 1993, Mabin 1991, Harrison 1996). These authors highlighted among other issues, the discriminatory nature of apartheid planning, the marginalization based on racial, ethnic and other markers of difference.

The challenges of the Shembe spatial practice to planning intervention have to be seen in terms of the broader social processes that are responsible for persisting inequality; what Mbembe (2013) described as the `lust for our lost segregation`; the deep tensions along racial lines; the proliferation of enclaves of affluence and degradation; and the ubiquitous informality; all of which characterize the current city-form.

There is also the halting intervention of local authorities in shaping the city, resulting in what Peattie (1991:36) described as the `splendid entrepreneurial disorder and hustling boosterism`, and `a functioning order that seems messy on the ground` (ibid: 39). The pace with which development takes place and its character poses additional challenges for meaning government intervention in terms of setting the agenda.

Equally powerful is the ascendancy of a market-driven consumerist culture that revolves around the buying and selling of goods and services, which pervades all aspects of contemporary city life. This has contributed to the pervasive spiritual malaise. The combination of these factors contributes and shapes the current form of the city of Durban.

4. Spontaneous Self-Diversification

In Lefebvre terms (1987), the city of Durban may be characterized as a `spatial practice` produced between `spatial representation` of professionals and city officials, and `representational spaces` as lived and imagined by inhabitants of the city. `Spatial representation` refers to those spaces produced by professionals and officials, and `representational spaces` refers to those spaces that result from people's interaction with the built environment that is produced by professionals.

`Representational spaces` oftentimes are instances of cultural conflict and change, which activates spaces in ways hitherto not imagined, and as such, bring excitement and stimulation that transforms cities beyond the imaginations of officials and academic theory. The numerous siting of these `religious sites` by the Shembe Church predominantly on public/municipal land in and around the city represent instances of `insurgent planning`, which results in `representational spaces.`

In the context of South Africa, planning challenges presented by `representational spaces` cannot be understood without reference to both the colonial and apartheid pasts, which, with the aid of modern planning techniques, marginalized groups in society and other ways of being in the city. Overcoming this legacy is the single most defining aspect of current state planning initiatives in South Africa. Opportunities for `spontaneous self-diversification` emanate, in part, from a more inclusive post-apartheid political dispensation that is more tolerant of difference.

The discussion now turns briefly to focus on the historical background of the Shembe Church and their cosmology with the view to assisting with the reformulating of informative policies and plans. If these sites are to be accommodated in official plans and policies instead of the prevailing polite acquiescence, a better understanding of the practice may be necessary.

5. The Nazareth Baptist Church/ Shembe Church

The Nazareth Baptist Church (Ibandla lamaNazarites or Shembe Church) is the oldest African Independent/Indigenous Church in South Africa. It was founded by Inkosi Isaiah

Shembe (1860's-1935) in 1910. The church forms part of African Initiated Churches that date back to the 4th century Ethiopian Orthodox Church.

The Shembe religion is a combination of Zulu culture and Christianity. The main church is located on a sacred site north of Durban called Ekuphakameni, which is translated to mean 'Place of Spiritual Upliftment'. Recently, there has been a marked proliferation in the number of sites of different shapes and dimensions in and around the city, which bear the hallmark of the Nazareth Baptist Church.

The mere sight of the Shembe religious gathering in seemingly awkward shaped and random spaces in and around the city, especially on Saturdays, is enough to arouse curiosity from tourist and locals alike. White stones arranged in a semi-circle preferably under a tree have become a common sight not only in Durban, but can be seen in other cities as well.

According to the informants, the `founding` of the site follows a well-established ritual of prayer, weeding as part of cleaning process, planting of trees for shade usually at the centre, the placement of white stones, and finally another prayer to `open` the site for service. The penultimate blessing of the site takes place after all the above and this involves what seems from the descriptions, like a more elaborate affair involving a number of priests and invited guests.

Trees are planted where none exists to provide shade. Church members volunteer their time for the upkeep of the site. The size of the space is dictated by the number of the congregation on each particular site, which can be extended depending on the physical extent of the site.

To the uninitiated there appears to be no logic behind the selection of sites, size and orientation, if any, but according a guided `tour` of one site revealed that men sit separate from women, who in turn sit separate from girls and the priesthood. Furthermore, entrances are also separated in similar fashion, with each entrance oriented towards the center, which serves as the focal point for all who enter the space.



Figure 1: A recent site on private property. It illustrates an arrangement of white stones with 4 entrances and a marked centre, typical of all similar sites by Shembe Church. Photograph: K Mchunu, 2013

Every Saturday these `ordinary` urban spaces, majority of which are the postscripts of planning, are activated and come alive as worshippers all dressed in a combination of white and black garb with pieces of traditional Zulu jewelry could be seen gathering together for a service. In addition to Saturdays, specials services are held every 14, 23, and 25th of the month for women, men, and girls respectively. Upon further probing, the significance of these dates did could not be readily explained by the informants.

However, it is noteworthy that once permission has been granted, the site is altered, albeit lightly, to the specific requirements of the Shembe Church. Following a specified set of rituals to mark the site as a worshipping space, strict rules governing entrance into the space are introduced, including removing ones shoes. Although all are welcome for prayers, and the site alterations slight, there is an implicit assumption that these spaces are now to be regarded as religious sites (and `belong` to the Shembe church), to the exclusion of other uses.

6. Implications for Planning Theory and Practice

This practice by the Shembe Church poses numerous challenges for planning as to the appropriate response. What should planners and policy makers do in the face of such a practice? Are such `spontaneous self-diversification among urban population`, as Jacobs (1961) dubbed similar acts of difference and diversity in the city, to be nurtured and embraced in the formulation of policies and plans? A decision of some sort has to be made and action taken as about every facet of urban infrastructure.

Part of the way forward may be found in that dog-eared, well-thumbed copy of Jane Jacobs (ibid), her argument for the need to embrace such practices; Young's (1990) conception of justice, the notion of cultural imperialism in particular; Sandercock's (1998, 2000) and Qadeer's (1994) discussions on the limitations of modern planning in contexts that are increasingly marked by multiculturalism and the need to transcend the limitations through inter alia, a process of inclusion; Harvey's (1992) concept of Social Justice as universal meta-narrative that transcends issues of otherness; and a host of writers concerned with issues of diversity and difference. Also, Schon's (1993) reflective practitioner is also relevant in this context of contested meanings and diverse value systems.

Armed with these perspectives, we could try to `decode` the seemingly random and indiscriminate siting of these spaces in order to celebrate difference, perhaps develop empathies for `otherness` in the city; or allow such practices to `...stand forth with their difference acknowledged and respected, though perhaps not completely understood, by others` (Young, 1990:108).

Identifying relevant sites involves an element of flaneurism by church members may be necessary to discover potential sites. With this ability to navigate urban terrain and to identify suitable spaces, the Shembes seem not bothered to follow conventional planning regulations for space and its designated purpose. They seem to stake a claim on the urban environment without demanding legal ownership, and with a rather uncanny ability to transform the mundane into the transcendental, and in the process reshape urban space.

Once a site has been identified, and a process of negotiation with owners concluded, sites are then transformed into sacred spaces following the process alluded earlier. It is therefore not surprising that thus far, the uses have not turned out to be conflictual, and the forces of law have not yet decided to impose some authoritarian solution. Instead there seems to be a polite nod on the part of the municipality, which may suffice in the short-term.

There is a sense in which it could be argued, and rather convincingly, that this practice by spatial practice by the Shembe Church is posing a question as to who has a right to decide on the correct way to use public space? Through a combination of negotiation with relevant owners, and a rather footloose use of space, the Church introduces a less onerous method for land use management. The Shembe Church is, in a sense, creating a parallel city, a city with a different tempo, value system, and character, utilizing the fabric of the current city. Their city registers on a different scale and answers a different set of needs. The Church of Nazareth is creating islands of tranquility, serene spaces amidst the hustle and haggling, where, according to the informants all are welcome for a pause, a moment of reflection, and prayer irrespective of one's religious persuasion.

7. Diversity and the Modernity

The foregoing raises epistemological challenges around the limitations of modern planning, much about which has been written in planning literature (some refs). Modernism and other fashionable meta-paradigms (Global Cities, World Cities) have come under criticism for failing to adequately account for the diversity of urban practices (Murray 2004, Baum 1996, Sandercock, 1998; Dear 1986, Verma 1996). This diversity is a product of historically specific practices that connect with local circumstances in particular ways (Murray 2004).

The privileging of mainly western epistemology that does not adequately account for this diversity of urban experiences is regarded as problematic. The deconstruction of these predominantly western universal narratives is one of the major achievements of the radical critique of the past couple of decades. But the ground had already been laid long before as Harvey (Op cit.) rightfully noted.

This meant that all forms of meta-theories are either misplaced or illegitimate. Instead, alternative epistemologies, which speak to particular contexts, are touted as more relevant. These fragmented discourses were regarded as more grounded because they articulated particular local circumstances in which individuals and groups found themselves. But fragmented discourses could never go beyond challenging particular issues affecting their groups or members. This fails to address the broader system in which the particular issues are embedded.

Similarly, the spatial practice by Shembe and other similar uses articulate particular issues, advocate for the rights of their constituencies whose ignored needs are symptoms of a much

broader issue of marginalisation and discrimination in society. Although it may be hard to fault the sentiment for embracing the Shembe practice by acquiescing to the request for space as an act of `spontaneous self-diversification` of which Jacobs (Op cit.) speak, its operationalization is fraught with difficulties, especially in the South African context where apartheid perverted and manipulated group differences for political ends` (Mchunu, 2005:223).

The deconstruction of all meta-narratives as a universal basis for action although significant, left in its wake a plethora of fragmented discourses whose legitimacy obtains from being grounded in the particularities of their contexts. This either drains the legitimacy of state policy in the face of such a multitude of voices all clamouring to be heard and accommodated, or at worst attribute such policies to serving the sole interest of the ruling class that Plato's Republic admonished about and the history of South Africa suggest.

Also, group identity may provide an opportunistic launching pad for the redistributive claim on public resources (Mchunu, *ibid*), such as the appropriation of these spaces in this instance. This may be problematic, particularly if the claim is perceived not to be in proportion to the size of the group concerned, and in the context of limited resources (*ibid*). Yet freedom of city life encourages diversity, `the openness to unassimilated otherness` (Young, Op cit.).



Figure 2: A well-maintained site by city council in the suburb of Morningside. Photograph: K Mchunu, 2013

The suggestion to engage as Jacobs (op cit.) advocated also raises other concerns that Harvey (op cit.) highlights as problematic: in what ways can for example informality (shantytowns, street vendors), homelessness, gang turf-warfare's and the like be understood as `spontaneous self-diversification`?

8. Conflicting Uses of Space

The sites are usually located in urban areas in and around the Central Business District (CBD), in spaces officially designated for other land uses. It is to be expected that worshippers will meet other people who have different opinions about how best to utilise the space, or those who preferred the original use for which the plot was designated.

Although these sites are a result of negotiation with the owners for temporal use by the church, this becomes problematic if the land is publicly owned and the municipality has granted permission to occupy without consulting the public. By law, any change in land use requires comment by the public.

The potential conflict that might arise through such appropriation of public spaces by certain groups has been highlighted before. Mchunu (2006) describes a similar phenomenon involving `street monuments` that mark the sites of fatal road accidents. Wreaths and crucifixes are placed on these spots for indefinite periods of time in memory of those who perished. The sentiment is hard to fault, inasmuch as it is hard to challenge the rather benign uses by the Shembe Church. But there is a sense in which public spaces are usurped by particular groups to the exclusion of others without any due processes being followed.

Franck and Stevens (2007) also popularised a somewhat similar notion with their concepts of `tight and loose` spaces. Loose spaces occur where the designated use seems no longer relevant, or where different land uses are tolerated simultaneously. These also tend to be spaces that seem superfluous, or `leftover spaces that are free of official planning and commodification` (ibid, 8), as exemplified in figure 2 above. According to Franck and Stevens (ibid), loose spaces are central to the production of a healthy urban texture. What happens when loose space is appropriated and no longer becomes loose by nature of the use being introduced?

These practices activate spaces in unconventional manners, appropriating public open spaces for their activities. In the case of Shembe, they negotiate their right to use these

spaces with owners, be they private or local authorities. According to the one informant, such uses are always temporal, subject to the agreement with the owner. They also pointed to the lack of physical structures to indicate the non-permanent nature of the use, and that all denominations are welcome to pray.

9. Informality and Marginality

The Shembe practice is representative of instances of marginality and informality that are constitutive of life in the cities. One of the characteristics of contemporary cities, more especially in Africa, is the pervasive informality and marginality as manifested among other examples in street trading, the predominant modes of public transport involving privately operated vehicles, and the infamous squatter settlements or slums, cross-border and rural migrants, (see AlSayyad and Roy 2004). Both marginality and informality thrive on loose spaces of the crumbling urban fabric of the modern city.

Informality and marginality speaks to notions of temporality, ephemerality, uncertainty, and ambiguity. But also inherent in the discussions around informality and marginality are notions of movement and lightness. It is no coincidence that the predominant metaphor of airport cities (aero-polis) is popular in planning and government circles, the emphasis being on speed and lightness. Public transport terminals (airports, bus and taxi ranks, highways, fast-speed rail networks) have become dominant land uses and landmarks. The point being made is that the idea of movement, which has captured official imaginations, resonates with the experience of informality and marginality as other equally important ways of life in the city.

Living on the borderlands as Sandercock (2000) dubs life on the margins or living with informality, is a reality for some of the urban dwellers who have embraced them as positive spaces that are full of potential. She suggests that planners could learn from these marginalised groups by listening to their stories in order to improve not only planning theory and practice, but their lives as well.

Witness how the negative connotations associated with marginal spaces like the infamous townships have been gradually subverted, through popular imagination, by a much more positive narrative of townships as hip spaces. This popular view has been reinforced lately by both private and public sector investments in shopping atria and public infrastructure respectively.

10. Implications for Theory and Planning Practice

Sandercock (2000:6) began spelling out some of the elements required for planning practice to engage more meaningfully with this practice:

`Dialogue and negotiation across the gulf of cultural difference requires its practitioners to be fluent in a range of ways of knowing and communicating. Something more than the tool-kit of negotiation and mediation is needed, some `method`, which complements but also transcends the highly rational process typical of the communicative action model`.

Similar to other expressions of `spontaneous self-diversification` in the city, the official response could either be characterized as respectful, or as providing, as suggested by Jacobs (op cit.), in the sense that there has never been any violent confrontation by the city or members of the public.

In another sense the official response has been uninspiringly halting and at best acquiescing irrespective of where these religious sites may be occurring. This polite `openness to unassimilated otherness` (Young, Op cit.) may be all that planners could do yet, liberating public space for the heterogeneity that comes with the mixing of religions and other expressions of diversity in public space.

To this view I also bring her notion of cultural imperialism as one of what she describes as the `five faces` of oppression, which `the dominant meanings of a society render the particular perspective of one's own group invisible at the same time as they stereotype one's group and mark it out as the Other`. However, this is not to suggest the rest of her views on justice are not relevant, cultural imperialism speaks more to the issue at hand.

Schon (1993:18) called to attention the `mismatch of traditional patterns of practice and knowledge to features of the practice situation – complexity, uncertainty, instability, uniqueness and value conflict`. He proposed substitute the idea of reflection in action for the knowledge and application model of positivism and epistemology based on the idea of reflection in action.

Such approaches should be underpinned by a higher-order unified discourse, one that transcends the postmodern fragmentation that paralyses policy formulation. While acknowledging that justice and rationality as unifying discourses take on different meanings across space and time, Harvey (1991:598) also argues that `the existence of everyday

meanings to which people do attach importance and which to them appear unproblematic, gives the terms a political and mobilizing power that can never be neglected`.

Flyvbjerg (1990, 2001) and Peattie (2001) draw attention to Aristotle's distinction of three forms of knowing; Episteme, which refers to science or knowledge that is fixed and universal; Techne or Technique, what is distinguished as art and craft; and Phronesis, which is defined as knowing what to do in particular circumstances, not generalizable but context-dependent. Phronesis is preferred as the appropriate mode of knowledge for Planning. It is knowledge that is largely experientially determined. This is likely to entail Schon's (Op cit.) reflection in action on a wide repertoire of similar instances.

In conclusion, a context such as obtainable in South Africa, issues of exclusion and inclusion, domination and marginalization remain relevant owing largely to the colonial and apartheid pasts. Sensitivity to Young's notion of justice as discussed above, in particular her idea of cultural imperialism is relevant and inescapable in dealing with instances such as the Shembe practice. The appeal to a unifying discourse as alluded above as demonstrated by Harvey serves as the bedrock upon which the operationalization of the above rests.

The writers cited above are all grappling progressively about the challenges at hand. They all embody the positive aspects of postmodernism as opportunity to rethink and re-energise planning theory and practice.

If cities are a result of collective creation (Peattie 1991), `voices from borderlands` that Sandercock (1995) speaks about have become increasingly vociferous in their challenge for planners to re-envision theory and practice to be more inclusive. They show us what is wrong with our cities and suggest ways for addressing some of these challenges. She elaborates further (ibid: 85) that they:

`...describe the state of living on/in the borderlands, living in between, living on the margins....living with uncertainty, living without universals. But they do not live without hope or without meaning. They embrace uncertainty as a potential space of radical openness which nourishes the vision of a more experimental culture, a more tolerant and multifocal one.

The building and sustenance of more inclusive and tolerant cities demands no less than a practice and a pedagogy that embraces the inherent diversity of city-life. Planning is still relevant in assisting to direct the form and scale of mainly government but also private sector

investment in cities. It also remains relevant in facilitating a much broader envisioning of the city.

Bibliography

- Alsayyad, N. (2004). Urban Informality as a `New` Way of Life. In N. a. AlSayyad, *Urban Informality: Transnational Perspectives from the Middle East, Latin America and South Asia* (pp. 7-30). Maryland: Lexington Books.
- Ameel, L., & Tani, S. (2012). Parkour: Creating Loose Spaces? *Swedish Society for Anthropology and Geography*, 17-30.
- FLyvbjerg, B. (1999). Aristotle, Foucault and Progressive Phronesis: Outline of an Applied Ethics for Sustainable Development. In E. R. Winkler, & J. R. Coombs, *Applied Ethics: A Reader* (pp. 11 - 27). Oxford: Blackwell Press.
- Flyvbjerg, B. (2001). *Making Social Science Matter*. Berkely: California Press.
- Franck, K., & Stevens, Q. (2007). Tying Down Loose Space. In K. Franck, & Q. Stevens, *Loose Space: Possibility and Diversity in Urban Life* (pp. 1-33). London: Routledge.
- Gunner, E. (1988). Power House, Prison House - An Oral Genre and its Use in Isaiah Shembe's Nazareth Baptist Church. *Journal Of South African Studies*, Vol. 14, No. 2, 204-227.
- Harvey, D. (1992). Social Justice, Postmodernism and the City. *International Journal of Urban and Regional Research*, 588-601.
- Hou, J. (2010). (Not) Your Everyday Public Space. In J. Hou, *Insurgent Public Space: Guerrilla Urbanism and the Remaking of Contemporary Cities* (pp. 1-17). London: Routledge.
- Jacobs, J. (1961). *The Death and Life of Great American Cities*. New York: Vintage Books.
- Lefebvre, H. (1991). *The Production of Space*. Oxford: Blackwell.
- Mbembe, A. (2013), March Friday). The Lust for our Lost Segregation. *Mail and Gurdian*.
- Mchunu, K. (2005). Claiming Space in Post Apartheid South Africa. Oxford, UK: Unpublished Thesis.
- Mchunu, K. (2006). Contested Spaces: The (Mis)Use of Urban Space in contemporary urban Africa. *Global Places, Local Spaces*. London.
- Murray, M. (2004). *The Evolving Spatial Form of Cities in a Globalising World Economy. Johannesburg and Sao Paulo*. Cape Town: HSRC Publishers.
- Peattie, L. (1991). Planning and the Image of the City. *Places 7:2*, 35-39.
- Peattie, L. (2001). Planning Theory Symposium: Theorising Planning, Some Comments on Flyvbjerg's rationality and Power. *International Planning Studies Vol 6, No. 3*, 257-262.
- Qadeer, M. (1997). Pluralistic Planning for Multicultural Cities. *Journal of the American Planning Association No 63 Vol 4*, 481 - 494.
- Sandercock, L. (1995). Voices from the Borderlands: A Meditation on a Metaphor. *Journal of Planning Education and Research 14*, 77-88.
- Sandercock, L. (1998). Multiculturalism and the Planning System Part 1. *Australian Planner Vol 35 No 3*, 127 - 132.
- Sandercock, L. (1998). *Towards Cosmipolis: Planning for Multicultural Cities*. Chichester: John Wiley.
- Schon, D. (1993). *The Reflective Practitioner. How Professionals Think in Action*. New York: Basic Books.

Wikipedia. (n.d.). Retrieved February 1, 2013, from Wikipedia Web Site:
http://www.wikipedia.org/wiki/Isaiah_Shembe

Wikipedia. (n.d.). Retrieved February 1, 2013, from Wikipedia Web Site:
http://en.wikipedia.org/wiki/African_Initiated_Church

Young, I. M. (1990). *Justice and the Politics of Difference*. New Jersey: Princeton University Press.

Effective Community Engagement Tools in Watershed Plans: Examples from the USA

Mahbubur Meenar, Temple University, USA

Jeffrey Featherstone, Ph.D., Temple University, USA

Lynn Mandarano, Ph.D., Temple University

Brian Olszak, Temple University, USA

1. Introduction

The purpose of this paper is to explore, understand, and document various community engagement (CE) tools or instruments that have been used in the watershed planning process within the United States (USA). By “watershed plans”, we mean two types of plans: (i) watershed management, protection, or restoration plans, and (ii) flood management or stormwater management plans at the watershed level. This paper aims to find out a few exploratory questions. Does the nature of CE tools vary for watersheds of various scales or geographic regions? What are the most commonly used CE tools across the USA and why or how are they used in watershed plans? Have digital civic engagement tools, in recent times, become as popular as in-person engagement practices? What are the primary concerns or constraints of using CE tools effectively in developing USA-based watershed plans? What CE tools have been proved effective in the watershed planning process?

In order to answer the questions, we use qualitative methods such as document reviews and case study research. In the next section, we provide a literature review highlighting evaluations of the use of CE tools in the watershed planning process. In the following section, we develop a typology of various CE tools used in watershed plans of various scales. This typology is based on our review of 23 watershed plans, including watershed management, protection, or restoration plans and green infrastructure plans, selected from various regions of the USA. We document the use of in-person CE practices such as public information meetings, stakeholders outreach meetings, focus groups, and workshops, and digital CE practices such as emails, web sites, and social media. In the following section, we present seven brief case studies, selected from those initial 23 plans, discussing in detail the nature and types of CE techniques used in the watershed planning process. Finally, we discuss the major constraints of using CE tools and provide an outline of lessons learned from the USA that may be applicable to watershed planning in other counties.

2. Literature Review

The late American author and planner Sherry Arnstein (1969) developed a “ladder of public participation” that posits nine steps of participation ranging from “manipulation” at the bottom of the ladder to “delegated control” and “citizen control” at the top. Modern planners are familiar with these CE steps and realize that securing the support of important stakeholders can be the critical step in making a plan a reality (ISOCARP 2013).

Effective CE tools promote participatory decision making, an age-old process where people deliberate together over issues affecting their future and make appropriate decisions (Toker 2012). So, what does it mean in the world of planning? Throughout the decision making process, the planners work with stakeholders, help them reach decisions about planning issues, and translate the process and decisions into planning language (Toker 2012). The

CE process promotes two types of actions: making *for* people and making *with* people. Communities throughout the USA use participatory decision making tools in their planning and development processes in order to fulfill two primary objectives: understanding people's needs and practicing good design and management (Toker 2012).

The process of creating watershed plans can be highly technical. As such, public outreach and education programs are typical to most watershed planning processes. The more advanced forms of CE where citizens participate as decision makers are not as common because some professionals perceive this level of citizen input may undermine the value of the "experts." To address such concerns, watershed planners have developed methods and tools that not only address such concerns but also make this highly technical process inherently democratic.

Evaluation of effectiveness of participation and participation exercises

While much work has been done on evaluating partnerships and public engagement campaigns overall, very little research exists on the effectiveness of CE tools used within the context of watershed planning and management. Carr et al. (2012) conducted a meta-analysis of published research on any form of participation, from passively receiving information to actively engaging in decision-making in water resources management and planning, resulting in a categorization of three types of evaluation and corresponding criteria. The types of evaluations included quality of the participation process, intermediary outcomes, and resource management outcomes. The key findings indicate that only a few studies show watershed management benefits from participation, but no studies reveal negative impacts of participation. An earlier study by Mandarano (2008) reported the results of comprehensive evaluation of a National Estuary Program, a watershed management process, using all three tiers of evaluation noted by Carr et al. (2012). In this study participation was defined by the routine participation by individuals in the formal collaborative planning process. The findings indicate that the collaborative process produced learning, social capital, political capital, institutional changes and on-the-ground outcomes.

More conventional, ubiquitous and formal means of public engagement tools such as public hearings and public comment periods tend to emphasize the existing opposing sides while reinforcing existing power inequalities (Innes & Booher 2004). Kingsley (2008) found in a study of several public information meetings geared towards water management that, while public meetings served as a good source of information about watershed issues, they were not effective at increasing public participation for watershed planning. On the other hand, disseminating public information by utilizing technology-based learning (such as GIS) participants expressed a better presentation experience and enhanced understanding of the relationship between watershed management policies and water quality (Conroy & Gordon 2004).

Conroy (2011) evaluated the specific elements of the participation process in a water-quality planning process that encourage or discourage effective participation. The meeting and participation format (e.g. participating in an advisory board, a mail or telephone survey, an email solicitation, among others) had a significant influence on whether an individual was likely to participate (Conroy 2011). The effect many other elements of the participation process had on participants, including whether the topic was personally significant and whether meeting times were convenient, were also discussed.

Moorehouse & Elliff (2002) concluded from a study of a Texas water resource planning process that focus groups can "help facilitate communication and lessen frustration." Konisky & Beierle (2001) have qualitatively described and discussed the strengths and weakness of what were at the time "innovative" CE mechanisms—such as study circles, citizen juries, and collaborative watershed management—but called for more evaluation of these processes.

Some of these processes are aimed specifically at those who typically do not or would not participate in the more conventional or formal exercises.

Systematic study of the effectiveness of particular tools or mechanisms used for CE has been difficult due to a number of factors, as enumerated by Rowe & Frewer (2004; 2005). Various and overlapping definitions of tools and mechanisms exist, as there is no central authority or universally-agreed-upon definitions for these tools. While the usage of focus groups or interviews is widespread, many forms of workshops and other group-based interactions are often customized to the users.

Constraints to using CE tools effectively in watershed planning

Constraints to effective public participation throughout the process of watershed planning come in many forms. An incoherent leadership structure or failed problem identification can be serious constraints (Floress et al. 2009). The threat of the public seeing issues as being “studied to death” can also be a barrier to effective participation (Larson & Lach 2008), or that the process is seen as being more important to the project sponsors than “getting results” or “doing something.” Larson & Lach (2008) also found that different kinds of participants in a planning process (i.e. whether they are members of place-based or non-place-based organizations) affects the environmental attitudes of the participants, their expectations of the participation process, and how likely they will be satisfied with the results.

3. Review of CE Methods in Watershed Plans

We have reviewed 35 watershed plans, selected randomly through a Google search. After initial reviews, 23 plans that incorporated and described CE methods – either briefly or elaborately – were selected for further analysis. These plans were prepared by government agencies or nonprofit organizations from various regions across the USA, between 1999 and 2012. The CE methods or tools used in these plans were grouped into several categories, described below. Table 1 provides a matrix of PP methods used.

In-person CE practices:

- Public Meetings (public information meetings, citizen meetings, and stakeholder meetings)
- Group Interactions (advisory committees, citizen advisory committees, core work groups, technical work groups/ steering committees, focus groups, and youth outreach)
- Surveys and/or Questionnaires
- Events (workshops, charrettes, open houses, tours, speakers bureau, and major public events)
- Print (press/news releases, newsletter articles, brochures/handouts, and direct mailing)

Digital CE practices:

- Email
- Websites and Social Media
- Open Access Documents (public access to draft plans and document repositories)

Table 1: CE Methods used in watershed plans across the USA

Year	Title	Study Area (sq mi)	In-person CE practices					Digital CE practices		
			Public Meetings	Group Interactions	Survey/ Questionnaire	Events	Print Media	Email	Websites & Social Media	Open Access Documents
1999	Petaluma Watershed Enhancement Plan	146	X	X		X				
2000	Gwinnett County Watershed Protection Plan	437	X	X					X	
2002	Public Participation Plan for Carlsbad Watershed Management Plan	210	X	X	X	X				
2005	WRIA 1 Watershed Management Project	1280	X	X	X		X		X	
2006	St. Clair County Northeastern Watersheds Management Plan	219	X	X	X	X	X		X	
2006	Southern Washington County Watershed Protection Plan	56	X	X	X		X			
2004; 2008	Flint River Watershed Management Plan	568	X							
2008	Plum Creek Watershed Protection Plan	397	X	X	X	X	X	X		
2008	Pebble Creek Watershed Protection Plan	18		X						
2009	Metro North Georgia Watershed Management Plan	4941		X						
2010	Anacostia River Watershed Restoration Plan and Report	176	X	X	X	X			X	
2010	Duck Creek Watershed Management Plan	63	X	X	X	X	X	X		
2010	Mill Creek Watershed Management Plan	25	X	X						
2011	Blackberry Creek Watershed Action Plan	75		X						
2011	Middle Huron River Subwatershed Management Plan	217	X	X		X	X	X	X	X
2011	Norwalk River Watershed Action Plan	64	X	X						
2011	Prairie Dog Creek Watershed Plan	360	X	X			X			

Year	Title	Study Area (sq mi)	In-person CE practices					Digital CE practices		
			Public Meetings	Group Interactions	Survey/ Questionnaire	Events	Print Media	Email	Websites & Social Media	Open Access Documents
2011	San Marcos Master Water Quality & Hydromodification Plan	20								
2012	Antelope Creek Watershed Basin Management Plan	8	X	X		X	X		X	
2012	Barrington-Palmer-Warren Rivers Watershed Plan	68	X		X			X	X	X
2012	San Francisco and Blue Rivers Watershed Improvement Plan	2700	X	X						
2012	Santa Rosa Creek Watershed Management Plan	48	X	X	X	X				
2012	Lower Sonoma Creek Flood Management and Ecosystem Enhancement	166	X							

Based on initial reviews, we have found that the vast majority of plans (80%) reported incorporating the more conventional practices of in-person strategies, including public meetings and group or committee interactions to foster community engagement. Less than half (40%) included a description of any public events other than meetings. These public events could include more interactive processes that might attract a larger subset of the target population, such as workshops, design charrettes, and watershed tours and festivals. Far fewer plans included mention of any digital civic engagement practices: 32% of plans mentioned having a website or social media presence as an outreach tool, while only 20% of plans explicitly mentioned using email. No plans surveyed explicitly mentioned using social media as a part of the planning process, although one (Antelope Creek WBMP) indicated use of a social media strategy for one of their recommendations, focusing on homeowner outreach and education.

4. Brief Case Studies

The seven case studies presented herein highlight the CE tools used to support watershed management planning. In each case study CE tools were used for a range of public education and outreach to decision making practices to inform the formal decision-making body, which are a range of collaborative partnerships and coalitions responsible for developing and implementing the resulting watershed management plan.

Anacostia River Watershed Restoration Plan¹, 2010, Washington DC metro, size 176 sq miles

This watershed restoration plan was prepared by the Anacostia Watershed Restoration Partnership (AWRP), but the CE process was primarily handled by a citizen advisory committee—the Anacostia Watershed Citizens Advisory Committee (AWCAC). The AWCAC was formed and used by the project team to solicit comment and feedback during the plan's development. Additional discussions and meetings with the committee members and representatives of other community and watershed groups were held.

A public meeting open to all citizens was held during the beginning of the planning process to outline the study objectives, the proposed methods to be used and the products to be completed for the plan. Several interim “working” meetings were held primarily with the constituent watershed groups of the study area to brief group members on study progress and solicit feedback on the prioritization and support for proposed or provisional restoration projects in their respective subwatersheds.

Interim reports and fact sheets on the progress and status of the study were posted on the web site *anacostia.net*, with a 45-day open public comment period following the release of interim reports. Final draft reports were posted on the internet for a 60-day public review and comment period, specifically to solicit feedback from community watershed organizations and other interested parties.

Antelope Creek Watershed Basin Management Plan², 2012, City of Lincoln, NE, size 8 sq miles

The City of Lincoln and Lower Platte South Natural Resources District (NRD) worked with a project team of scientists and engineers to establish this watershed basin management plan and oversee the CE process. The CE process included both group interactions and public events. There were two main group interactions: the Core Work Group – professional and technical staff from various agencies, who met 11 times; and an Advisory Council – 12 member council comprised of resident, business and institutional stakeholders, whose members were proposed by the Core Work Group and appointed by Mayor. The council met three times. Two open house events were also held for the public at large: one at the beginning (in which approximately 90 people attended) and one toward the end of the process (in which approximately 40 people attended). In advance of the open houses, 11,000 postcard invitations were sent to property owners, and representatives of special interest groups and resource agencies. The first Open House used a large map of the Basin area, on which stakeholders and other participants could point to their houses and to the associated problem areas. The second Open House featured different stations at which people could stop and learn about the recommendations. More thorough stakeholder meetings were held with six stakeholder groups, which were identified by the Advisory Committee.

Four editions of newsletters were composed and mailed to 1,100 individual stakeholders, including individuals, businesses, non-profit agencies, community organizations and government agencies. The first two newsletters outlined the general watershed management process and the typical stormwater and pollution issues facing a watershed, while the last two presented the watershed modeling and testing conclusions, as well as the stormwater best management practices (BMP) recommendations for the plan. Press releases and news articles were utilized to publicize the open house events, while also keeping the public abreast on plan activities. The City of Lincoln Watershed Department website was also used to keep the public abreast on the details of the planning process. Information on the website included a project description, frequently asked questions, Core Work Group and Advisory Council descriptions and membership, as well as descriptions of the CE processes. The site was regularly updated and included an interactive glossary and several images.

Barrington-Palmer-Warren Rivers Watershed Plan³, 2012, East RI/West MA, size 68 sq miles

The FB Environmental Associates of Portland, ME, was the US Environmental Protection Agency (USEPA) contractor responsible for working with Rhode Island Department of Environmental Management (RIDEM) in the development of this watershed plan and oversee the CE process. The plan encompassed a broad array of stakeholders from Rhode Island and Massachusetts, including municipalities, non-profit and conservation organizations, Massachusetts Department of Environmental Protection (MADEP), and local citizens.

To introduce the planning process to stakeholders, two kick-off meetings were held attracting 27 and 17 attendees, respectively. Stakeholders included municipal elected officials, town/regional planners, watershed association members, natural resource professionals, representatives from non-profit organizations, and landowners in the watershed. Flyers were used to publicize the meetings, and follow-up phone calls were made to invited stakeholders in advance of the meetings. All meeting documents and maps were posted on the project website.

In addition, municipal meetings were held in individual watershed towns. Attendees were identified during the kick-off meetings and included municipal employees and other stakeholders. Similarly, follow-up email and phone calls were used to confirm attendees. In total five municipal meetings were held. Draft summaries of meetings were sent to municipal officials for review and comment before submitting the final draft to the RIDEM and USEPA.

A draft watershed plan was posted on website for approximately 2 months for public review and comment before being finalized. A public meeting was also held to solicit public comment on the draft report.

Duck Creek Watershed Management Plan⁴, 2010, Southeast Iowa, Size 63 sq miles

This watershed management plan was created by Scott County Soil and Water Conservation District (SCSWCD), in collaboration with Duck Creek Watershed Management Plan Advisory Council, Iowa Department of Natural Resources, and other partners from local government agencies. A local nonprofit, River Action, Inc. facilitated a planning committee, which met monthly for one year. The committee consisted of representatives of federal, state, county and municipal agencies, corporate stakeholders, local professionals, environmental organizations and concerned landowners and citizens, and created an initial watershed plan in 2008-2009. This second plan, sponsored by the Scott County Soil and Water Conservation District (SCSWCD), continues the work of the initial plan.

As part of the CE process, the SCSWCD and Partners of Scott County Watersheds, among other local partners, conducted a series of public meetings, with approximately 40 people on average attending each, including the local media, which resulted in press coverage. The plan's description of this process noted that more meetings should be held because they are "an effective means of providing information, receiving input, and attracting press." A direct mailing was sent to land owners and key agricultural operators. This mailing included a request to respond if interested in receiving additional cost-share programs and incentives on manure management planning. There was little to no response. A meeting in which the SCSWCD specifically reached out to livestock producers was organized, with mailed postcard invitations with follow-up phone calls – 25 attended, 14 of which were livestock producers. Surveys were distributed at beginning of meeting, and 7 were returned.

Surveys and questionnaires were sent to the youth in the watershed area specifically soliciting their views. An online Survey was emailed to 400 young people, with 83 individuals completing the survey. The youth survey also was distributed during an environmental fair, and 194 surveys were completed.

The SCSWCD found that there was little enthusiasm for serving on the SCSWCD committee to determine future projects in Duck Creek Watershed. The agency concluded that more enticing, exciting, interactive tactics will be researched and used to engage the public in the planning process.

Plum Creek Watershed Protection Plan⁵, 2008, TX, Size 397 sq miles

The Plum Creek Watershed Partnership and the Watershed Coordination Steering Committee (WCSC) of the Texas State Soil and Water Conservation Board chose Plum Creek to develop a watershed protection plan as a voluntary alternative to more regulatory approaches water quality management. Several initial public meetings were held to advertise and inform the public about the watershed planning process, and participants were openly invited to join the resulting Plum Creek Watershed Partnership, which would be the main vehicle for the planning and CE process. From this partnership, a steering committee, work groups, and a technical advisory group were formed, composed of extension and conservation district representatives, local and regional governments, and citizens and volunteers.

This process had many informational and more passive venues for outreach. A plan website included information on the watershed and partnership, a regional watershed coordination newsletter, press releases, an online discussion forum, links to project partners, access to the Watershed Protection Plan, water quality data, a meeting schedule, and information presented at previous meetings. Fact sheets were distributed in the watershed via direct and electronic mail, at stakeholder meetings, and at other area events, and were made available at various public offices and community organizations; updated versions are made available on the project website. Ten news releases were sent out to over 100 media outlets. Newsletter articles were written and distributed bi-monthly and via email to watershed groups and several other additional outlets such as community organizations, extension officers, master gardeners, master naturalists, and homeowners groups. These articles were also posted on the website.

The partnership steering committee sponsored events such as a watershed tour, which was a full-day event with 64 participants. Its goal was to provide an overview of the current conditions and challenges the watershed faced. An outreach and education work group of the Plum Creek Watershed Partnership, in order to create a logo and branding identity for the watershed planning effort, surveyed stakeholders to solicit ideas. When used with project-related document and marketing materials the logo and associated branding were intended to stimulate more public awareness and program recognition.

WRIA 1 Watershed Management Project⁶, Long-Range Plan for Public Involvement and Education, 2001, Bellingham, WA, Area: 1,280 sq miles

A collaborative partnership among federal, state, and local agencies was in charge of the overall decision-making process of this watershed management plan. In addition, the Planning Unit of a regional coalition of county, city, state and tribal governments created a separate CE plan. This CE plan includes a series of proposals intended to integrate public involvement and education into the ensuing watershed planning process. The plan included the participatory elements for both the planning and the implementation phases of the watershed management plan, with the intent to both inform and solicit involvement and input. When soliciting input the three general strategies were to solicit direct input, stay attuned through “temperature taking” by monitoring the understanding and feelings of citizens in general, and to close the loop by having citizens see how their input was being incorporated into the planning and implementation process.

Several CE tools were used to inform citizens of the issues and of the planning process in general. They included broadcast and print media activities (television, a newsletter insert in local newspapers and radio), a project website, bi-weekly/monthly updates via website, email, fax, and articles in existing newsletters. Project information and updates were included in other governmental outreach efforts as well. In the rural parts of the watershed that did not have established community organizations, informal community leaders are being recruited to help educate the local public during the ongoing planning process. This effort will also

include maintaining a presence at local festivals and events, with tables, information distribution, and displays.

Venues to gather and solicit feedback and comments included quarterly public meetings that included Q & A surveys that followed meetings, a speaker's bureau to attend meetings of community groups and organizations and solicit input, and disseminating information and questionnaires at coffee shops, laundromats and other informal gathering places. A technical team was created to translate scientific and technical information and surveys to an average lay person. An evaluation of the CE process and individual methods will be undertaken by the Planning Unit staff.

Middle Huron Watershed Management Plan – Public Participation Document⁷, 2011, Ann Arbor-Ypsilanti Metropolitan Area, MI, Area: 217 sq miles

The Huron River Watershed Council (HRWC) was responsible for the overall collaborative watershed planning process. A separate public participation plan (PPP) was developed for the Middle Huron Watershed Management Plan. This PPP was submitted by the HRWC, and it included two main categories of participation: Public Notices and Outreach and a Citizen Advisory Committee or CAC. The CAC was made up of local stakeholders that met on a regular basis to provide feedback on the plan as it was being developed. The HRWC, in conjunction with the Middle Huron River Stormwater Advisory Group (SAD) implemented the PPP. Public meetings were held at various stages of the process as well, one of which was in collaboration with the CAC.

Media and press releases and articles in local newsletters were used to alert the public about plan progress and solicit feedback from citizens on the plan development. Announcements to local boards and other interested groups were also made, including email listservs for two adjoining watershed councils. Announcements, flyer distribution were handed out and on display at major public events in watershed communities soliciting citizens' involvement in the planning process and initiative. The project website shared information on the status of the plan's development, as well as the planning process in general—the websites hits were tracked as well.

Throughout the CE process, the HRWC evaluated the various tools. An evaluation survey form was handed out to all participants after each meeting or event, with special attention given to finding out how each participant found out about the meeting or event.

5. Lessons Learned from the USA Experience

Our paper set out to explore how CE tools are being used in the watershed planning process in the USA. We sought to understand the effective use of CE tools from several perspectives. First, our aim was to reveal which CE tools have been proven effective in the watershed planning process. The planning documents reviewed indicate that agencies and nonprofit organizations employ a large number of in-person and digital CE tools. While Sherry Arnstein (1969) would describe many of these tools as “tokenism” in her ladder of participation as most only involve consultation and information exchange, they seem to be legitimate attempts by organizations to inform and engage the public, particularly the important stakeholders in the watersheds. Unfortunately, the descriptions of civic engagement processes in the watershed plans and related documents do not include information relative to assessing the effectiveness of such efforts.

With respect to the variability of CE tools employed and most common tools used, the paper indicates processes across the US are making use of a broad array of CE tools. The most commonly used tools are traditional CE practices such as public meetings, group

interactions, events, and surveys. Digital CE technologies are increasing in usage. There does not appear to be a relationship between the size or geography of the watershed or complexity of the issues and the types of CE tools used. This lack of variability is likely due to the organizers' familiarity with traditional forms of CE and reliance on using the practices already in their tool box.

The most interesting findings are related to the primary concerns and constraints of using CE tools in watershed planning processes. While the efforts appears to target improving the public's education and awareness of the planning process, a handful also appear to include serious attempts to create partnerships and provide some degree of delegated power to plan stakeholders. This limitation is likely linked to the inherent constraints associated with watershed management and planning. Watersheds almost always transcend political jurisdictions and involve fragmentation of authority and involve complex scientific concerns, thus seeking citizen control or delegating decision-making powers to the general public is simply not feasible.

Our paper also describes the complexities associated with conducting CE. Some organizations directly conduct CE processes, while others use existing councils and citizens' advisory committees or create new ones to support the development of a watershed plan. In our analysis of watershed planning we found that it was often difficult to discern the degrees of autonomy and authority provided these councils and committees, and whether or not these functions were important to the success of the formal decision-making process or implementation.

The case studies do not provide clear answer to the question about which CE tools have proved most successful. As noted early, the documents reviewed provided descriptive information of the CE process but not assessments of their impacts. What is needed to answer the question regarding the effectiveness of CE tools and their correlation to successful decision making and implementation is rigorous third party assessments. For example, in his analysis of the planning and management activities of Delaware River Basin Commission (DRBC), a four-state, federal-interstate compact agency, Featherstone (1999) sought to link actions taken by the agency to achieving stated goals and positive outcomes through a program evaluation methodology. Through use of multiple analytical techniques including statistics and surveys, Featherstone was able to document positive outcomes achieved by the DRBC. This level of research was beyond the scope of this paper.

End Notes

¹ US Army Corps of Engineers, Metropolitan Washington Council of Governments, et al (Anacostia Watershed Restoration Partnership) (2010), *Anacostia river watershed restoration plan and report*, Retrieved from: <http://www.anacostia.net/plan.html> on May 1, 2013.

² EA Engineering, Science, and Technology, Inc. (2012), *Antelope Creek watershed basin management plan*, Prepared for City of Lincoln, NE & Lower Platte South Natural Resources District, Retrieved from: <https://www.lincoln.ne.gov/city/pworks/watrshed/mplan/antcreek/> on May 1, 2013.

³ FB Environmental Associates (2012), *Barrington-Palmer-Warren rivers watershed plan*, Prepared for RI Department of Environmental Management, Retrieved from: <http://www.dem.ri.gov/programs/benviron/water/quality/swbtmdl.htm> on May 12, 2013.

⁴ Scott County, IA, Soil and Water Conservation District, Partners of Scott County Watersheds, et al (2010), *Duck Creek watershed management plan*, Retrieved from: <http://www.iowadnr.gov/Environment/WaterQuality/WatershedImprovement/WatershedPlanning/ManagementPlans.aspx> on April 24, 2013.

⁵ Berg M, McFarland, M & Dictson N (Texas AgriLife Extension Service) (2008), *Plum Creek watershed protection plan*. Prepared for Plum Creek Watershed Partnership, Retrieved from: <http://plumcreek.tamu.edu/wpp/> on April 27, 2013.

⁶ WRIA 1 Watershed Management Project (2001), *Long-range plan for public involvement and education*, Retrieved from: <http://wria1project.whatcomcounty.org/64.aspx#wmp> on May 2, 2013.

⁷ Huron River Watershed Council (2011), *Public participation plan for the Middle Huron River subwatershed: Watershed management plan for the Huron River in the Ann Arbor – Ypsilanti metropolitan area*, Prepared for Washtenaw, MI, County Drain Commissioner, Retrieved from: <http://www.hrc.org/publications/watershed-management-plans-on-May-14>, 2013.

References

Arnstein, Sherry (1969), *A Ladder of Public Participation*. In *The City Reader* (Third Edition), New York: Routledge.

Carr, G, Blöschl, G, & Loucks, DP (2012), “Evaluating participation in water resource management: A review”, *Water Resources Research*, Vol. 48, No. 11, W11401.

Conroy, M & Gordon, S (2004), “Utility of interactive computer-based materials for enhancing public participation”, *Journal of Environmental Planning and Management*, Vol. 47, No. 1, pp. 19-33.

Conroy, M (2011), “Influences on public participation in watershed planning: Why is it still a struggle?”, *Planning Practice and Research*, Vol. 26, No. 4, pp. 467–479.

Featherstone, JP (1999), *An evaluation of federal-interstate compacts as an institutional model for intergovernmental coordination and management: Water resources for interstate river basins in the United States*. Doctoral Dissertation, Temple University, Philadelphia, Pennsylvania Dissertation Abstracts International, 61 (01). (University Microfilms No. AAT99-55817).

Floress, K, Mangun, JC, Davenport, MA & Williard KWJ (2009), “Constraints to watershed planning: Group structure and process”, *Journal of the American Water Resources Association*, Vol. 45, No. 6, pp. 1352-1360.

Innes, J & Booher, D (2004), “Reframing public participation: Strategies for the 21st century”, *Planning Theory & Practice*, Vol. 5, No. 4, pp. 419-436.

International Society of City and Regional Planners (2013), *Call for Papers for 2013 Congress*. Retrieved from <http://www.isocarp.org/subsites/isocarp-congress-2013/call-for-papers-themes-and-topics>, accessed on June 12, 2013.

Kingsley, K (2008), “*Quantifying the effectiveness of public meetings to generate public participation in watershed management*”, Master’s thesis, University of Wisconsin.

Konisky, DM & Beierle, TC (2001), “Innovations in public participation and environmental decision making: Examples from the Great Lakes region”, *Society and Natural Resources: An International Journal*, Vol. 14, No. 9, pp. 815-826.

Larson, KL & Lach D (2008), “Participants and non-participants of place-based groups: An assessment of attitudes and implications for public participation in water resource management”, *Journal of Environmental Management*, Vol. 88, No. 4, pp. 817–830.

Mandarano, L (2008), "Evaluating collaborative environmental planning outputs and outcomes: Restoring and protecting habitat and the New York New Jersey Harbor Estuary Program." *Journal of Planning Education and Research*, Vol. 27, No. 4, pp. 456-468.

Moorehouse, M & Elliff, S (2002), "Planning process for public participation in regional water resources planning", *Journal of the American Water Resources Association (JAWRA)*, Vol. 38, No. 2, pp. 531-540.

Rowe, G & Frewer, LJ (2004), "Evaluating public-participation exercises: A research agenda", *Science, Technology, & Human Values*, Vol. 29, No. 4, pp. 512-557.

Rowe, G & Frewer, LJ (2005), "A typology of public engagement mechanisms", *Science, Technology, & Human Values*, Vol. 30, No. 2, pp. 251-290.

Toker, U (2012), *Making community design work: A guide for planners*, Chicago: American Planning Association (Planners Press).

Innovative PPP Tools Supporting Urban Regeneration The Role of Non-profit Organizations in USA

Bruno MONARDO, "Sapienza" University of Rome, Italy
Alessia FERRETTI, "Sapienza" University of Rome, Italy
Alessandro BOCA, "Sapienza" University of Rome, Italy
Enrica POLIZZI DI SORRENTINO, "Sapienza" University of Rome, Italy
Enzo FALCO, "Sapienza" University of Rome, Italy

Synopsis

This contribution highlights the role of public, private and non-profit actors in urban regeneration processes reconsidering the leading role of municipal governments. The objective is to investigate which reasons drive local authorities to support PPP, and to understand how partnership models work and which conditions make them effective.

1. Urban Regeneration and Partnership dynamics

In OECD Countries - particularly in United States as well as in Western Europe.- since the last decades Urban Regeneration strategies have been representing a major goal for urban policies. Major cities have been supporting significant efforts to renovate public spaces and improve the attractiveness and accessibility of deprived urban areas, while reinforcing the sense of community and confronting with discouraging economic performances, deteriorating physical conditions, crime and safety concerns, social exclusion, environmental degradation.

The evolutionary path from the obsolete "renewal" rationale in the fifties of the last century to the more recent "regeneration" dimension can be identified in the transition from "place-oriented" to "people-oriented" strategies in which, through the strengthening of the social vector, the idea of physical, economic, environmental regeneration is enriched by new opportunities in order to pursue an authentic holistic dimension of the city and its enlarged community.

As the scientific literature has showed, it is a complex and multifaceted evolution, starting with the "urban renewal" approach and developing through the second part of the XX century with the maturation of specific models labelled by different definitions (Berg, Braun, Meer 1998), going from the so called "Urban Revitalization", mainly connected to the North American domain (Sutton 2008), to the properly called "Urban Regeneration" policies, mostly referred to the European context, despite its deep inner cultural diversity.

In the different styles of success regeneration policies and actions, the common "dna" can be identified in the integration concept: programs and projects show virtuous mix of activities, services, infrastructures, financing, and - "last but not least" - forms of governance with flexible partnerships among actors as representative as possible of the richness and vitality of the urban communities.

The issue of innovative partnerships within the contemporary crisis has become critical for governments, called to promote and implement effective transformations of urban and natural contexts through a virtuous cooperative vision, involving not only the traditional privileged subjects of the private domain, but also the small businesses, the community associations, other molecular, recessive stakeholders.

Agreeing that Urban Regeneration may be defined as a comprehensive and integrated vision which leads to the resolution of urban problems and aims at achieving improvements in the economic, physical, social and environmental conditions of the area that is being transformed (Roberts and Sykes, 2006), it is evident that its success is in most cases strongly influenced by the ability to face the challenge and “invent” and test innovative forms of partnerships ensuring and enhancing broader participation and inclusion in the whole project cycle.

Therefore, it is important to argue on the nature of some specific tools of Public-Private Partnership (PPP) in USA – particularly belonging to the non-profit dimension – trying to figure out their evolution since their introduction some decades ago and their present role in order to pursue virtuous scenarios and define innovative models in Urban Regeneration policies.

In the United States, PPP has a long tradition as national and state-government tool to regenerate urban communities (Osborne, 2000): since the 50s, several US federal programs were approved to support public-private cooperation – Urban Renewal Program (1949-1974), Community Development Block Grants (CDBG, since 1974), Urban Development Action Grants (UDAG- terminated) – and in the last 70s PPP was directly supported by the Carter Administration and its National Urban Policy (1978).

As highlighted by many authors, in the 1990s PPP has been established as a key tool of public policy across the world (Osborne, 2000). With respect to Europe, in general, there is an increasing political consensus about the importance of encouraging and implementing PPP models, although looking at the other side of the Atlantic ocean, different cultures, models and styles are evident. Concerning the “Common law” Country domain, for instance, over the last decades the UK Government has promoted multisectoral partnerships as a key factor to achieve urban regeneration and as an important way of dealing with the most severe urban problems (Lawless, 1991; Bailey, 1995). Indeed, particularly in the “Civil law” juridical culture Countries (Italy, France, partly Spain), the connection between non-profit organizations and private investors remains comparatively fragile (Jacobs, 1987) and in most cases those European non-profits show a high degree of economic dependency from the public authorities, since they represent an organizational tool for providing social services.

The importance of involving multiple stakeholders in urban regeneration processes has been widely investigated (Healey, 1996, 1997, 2007; Osborne, 2000; Reuschke, 2001) and some authors already highlighted how public-private interactions can support urban competitiveness and cohesion. Residents and community organizations have long sought out new formulas in order to guarantee wider participation in urban redevelopment initiatives and new forms of cooperation with the public sector.

Such an effort has to be considered even more important because of the increasing scarcity of public financial resources, which have driven local authorities to enhance a general partnership approach and to support strong relationship with non-profit organizations including the complex reality of local and external stakeholders.

On these premises, the main objective of this paper is to argue the role of public and private subjects in the partnerships supporting Urban Regeneration and the structure of the relationship among them, with a specific focus on the innovative role of non-profit organizations in progress in US. The investigation, based on the analysis of four case-studies, aims at highlighting the issue of the “flexible geometry” in roles of public, private and non-profit actors and the different approaches that might be adopted to reconsider the

leading role of municipal governments while proposing community-based solutions to public problems.

The case-study exploration is not limited to underline the traditional features of some good practices – quality performance in delivering community and social infrastructures, services and facilities, in supporting local community involvement and empowerment in decision making processes – but it also shows some of the problems connected with partnership involving community and public sector organizations – such as the leading (and sometimes meddling) role of public authorities supporting specific interests.

Moreover, the selected case-studies show the significance of PPP in overcoming divisions that previously undermined the urban regeneration process, illustrate different economic implications as for the involvement of the private and the public sectors, point out the decisive role of non-profit organizations when social issues are the main weakness and at the same time the major driving force for the regeneration process.

2. Understanding Public-Private Partnership: a brief background

In the United States the tradition of PPP is well established. As briefly mentioned in the introduction, its first applications date back to the 50s, but it found a wider use, which arrives to nowadays, especially from the 70s with the spread of downtown redevelopments projects (Osborne, 2000).

PPP can be described as a «contractual arrangement between a public sector agency and private sector concern, whereby resources and risks are shared for the purpose of delivering a public service, or for developing public infrastructure. (...) The intent, in any case, is to combine the resources of the public and private sectors, in the quest of providing services at optimal levels to the public» (Akintoye et al., 2008, p. 31). Actors involved in PPP are usually seeking for ambitions «they could not complete alone», which means that a «true» venture is the one in which mutually risk-sharing and mutually beneficial goals drive to jointly owned products (Sagalyn, 2007). In other words, the PPP approach aims at bringing resources and skills of the private sector in a number of different development projects which the public sector could not afford in a stand-alone position (Sagalyn, 2007).

The theoretical background of the PPP approach, especially in the US, is extremely wide as it gets to the very bottom of the same American economic and political tradition (Barnekov, *et al*, 1989), and is furthermore very controversial (Newman, 2001). Focusing our view just on the last decades, and according to many authors, PPP can be read as an opportunity to deepen democracy because of its potential to develop new forms of community participation in the affairs that directly concern the community itself (Coaffe and Healy 2003; Newman 2005). In fact, through both participation of different actors and cooperative practice the effort for a composition of pluralistic views typical of modern societies can find an optimal resolution, which also reflects a more effective and adequate governance (Kooiman, 1993; Rhodes, 1996).

Referring the last concept to the urban studies, PPP supporting urban regeneration operates as a strategic factor in the empowerment of individuals, communities and organizations in the provision of public services, thus transforming them into «self-sufficient, active, productive, and participatory citizens» (Cruikshank, 1994, p. 35), namely “active subjects” influencing and helping to shape government practice (Taylor, 2007).

Moreover, the rationale at the bottom of the PPP approach can be also related to the same origin of the communicative approach, in which «a communicative conception of rationality (...) replaces that of the self-conscious autonomous subject using principles of logic and

scientifically formulated empirical knowledge to guide actions. This new conception of reasoning is arrived at by an intersubjective effort at mutual understanding. This refocuses the practices of planning to enable purposes to be communicatively discovered» (Healey, 1996, p. 239).

Despite an optimistic view, some controversial topics about PPP have been highlighted by a critical literature which points out threats and weaknesses that may afflict the composition process.

On one hand, some authors point out how the benefits coming from the interaction between different actors and different concerns need an appropriate managing in order to translate the intervention of private actors in a proper social benefit (Fainstein, 2001; Sagalyn, 2007; Kokx, 2011).

On the other hand, other authors watch at the topic with a more skeptical view, basically underlining the incompatibility between market-oriented forces and public interests. In the most recent experiences of composition and relationships of different actors Swyngedouw (2005) reads the affirmation of neoliberal policies able to produce social disparities more than social benefits. Newman (2001) and Clarke (2004) focus on the difference of horizons between short-term pragmatism and public governance, pointing out that a performance-driven rationale might not be always appropriate with long-term sustainable goals.

As mentioned in the introduction, this paper intends to contribute to the literature about PPP focusing on the composition of varied concerns and on the interaction between different actors, especially with respect to the role of non-profit organizations.

In the United States non-profits are part of an extensive network involving non-governmental institutions in the integration of local activist organizations and other groups into “traditional” processes (Jacobs, 1987). The strategic role of non-profit organizations in the United States have been increasing following the urban uprisings of the mid-1960s and early 1970s, around a «notion of “corporate responsibility” [which] allowed companies to pursue their quest for profit while at the same time being “responsible” within the urban communities (...)» (Jacobs, 1987, p. 31). As it is pointed out (Ward and Imbroscio, 2011), non-profit organizations have become a new form of governance which institutionalizes the role of a range of actors in shaping the city through formal and informal politics. The same authors recognize the role of these organizations in expanding the definition of planning practice «including informal practices of urban dwellers and poor citizens, and recognize the role of citizens in constructing their neighborhoods, cities and livelihoods».

As the broader topic of PPP is, the literature about non-profit organizations and their role in defining spatial policies and practices is controversial. In fact, as argued by Rathgeb Smith (2000), a lacunae in actual theory still exists and the role of non-profits in enhancing social welfare has been probably overemphasized, especially with respect to explicitly politically significant functions that non-profits are fulfilling in urban areas.

3. Learning from US: Boston and San Diego case studies

As mentioned in the introduction, the main goal of the research this paper is dealing with was to explore diverse model of PPP within the general framework of urban redevelopment strategies. The investigation was conducted within a broader research¹ on urban regeneration tools and strategies in the United States, with a specific focus on economic and social aspects.

Considering the adopted inductive approach and to thoroughly analyse the multifaceted nature of PPP supporting urban regeneration processes, both at theoretical and empirical level, a “grounded theory” approach was adopted.

In order to avoid basing hypothesis on theoretical grounds – therefore in order not to allow for unexpected results to emerge from the investigation itself – quantitative and qualitative data were collected through several methods and different sources. First of all, the analysis of statistics from the Census Bureau was carried out to identify useful data on the demographic, social and economic features of the selected neighbourhoods. A review of community plans, redevelopment initiatives, zoning and land use was useful to identify the planning perspective and the most significant changes in the case-study areas. At the same time, critical overviews on related literature and press were carried out to find out connections, outcomes and possible weaknesses about the interventions and the PPP supporting the redevelopment process. Finally, qualitative data were gathered from interviews with selected stakeholders in order to identify and fully understand the different driving forces involved in the process and in the PPP itself.

More in detail, three different urban redevelopment-oriented models of non-profit organizations in the US were investigated (Business Improvement Districts², Main Street Organizations³ and Community Development Corporations⁴) in different contexts – Boston (Massachusetts) and San Diego (California).

The four cases studies described in the following paragraphs (*Downtown Boston Improvement District* plus the *Washington Gateway Main Street Program* in Boston; *North Park BID/Main Street* in San Diego; *Dudley Street Neighbourhood Initiative* in Boston) were selected in order to analyse differences in partnership composition, in urban regeneration models and in the role played by the involved stakeholders.

3.1 Downtown Boston Improvement District (Boston)

The *Downtown Boston Business Improvement District (BID)* was established in 2011 after 15 challenging years and it represents the strength of a solid finally achieved partnership.

As a non-profit development initiative, it is committed to offer supplemental services to support long-term maintenance while encouraging a general economic revitalization of Boston Downtown, where the mix of commercial, hospitality, institutional and residential properties demanded a higher level of elementary yet consequential public services that the City of Boston provided.

While the *BID* management entity is a non-profit organization of private property owners located in the district, the whole initiative is a solid and long-pursued partnership between local authorities and quasi-governmental entities, private owners and local stakeholders. Actually, as any other BID, the *Downtown Boston BID* is publicly authorized and privately managed, but it has been unusually promoted and supported in the start-up process and in its early stages: the City of Boston and the *Boston Redevelopment Authority (BRA)* played a leading and strategic role during the start-up, strongly championing the initiative and supporting the creation of the partnership.

Undoubtedly, the *Downtown Boston BID* is a successful PPP and it represents an important turning point for the area. A wide range of stakeholders were involved at all stages and the strong public leadership encouraged the dialogue between the actors involved: public meetings, official discussions with local stakeholders, face-to-face persuading campaign were necessary to overcome short and long term problems and to decrease tension. Therefore, since this BID exists in deep relation with local authorities and public actors, it may be considered part of the collective action determining urban policies.

Moreover, since Boston Downtown was facing more demanding issues – the decline affecting the area had causes and implications a BID hardly manages – the public involvement was crucial to support the non-profit in its challenging goal of transforming Downtown Boston into a cleaner, safer and more attractive place.

However, it may be questioned if such an involvement of the public authorities might compromise the BID's self-government and the non-profit autonomy. Actually, this initiative is continuing the positive development trend started by previous redevelopment initiatives promoted by the public authority, but it is hard to distinguish these previous initiatives and the good outcomes they produced from the BID's general strategy.

3.2 *Washington Gateway Main Street (Boston)*

Washington Gateway Main Street is a non-profit organization implementing the Boston Main Streets Program. Set up in 1997 as an outgrowth of the intense work of a 40-members Task Force appointed by Mayor Menino, it aims at revitalizing the neighbourhood from decades of decline while sustaining the economic vitality of its commercial and residential areas.

In more than 15 years, many results have been achieved and the initiative has been supported by an intense volunteer work and by a strong partnership – guided by the *Boston Redevelopment Authority (BRA)* – public sector), a pool of private developers and diverse local communities, in a joint effort to revitalize the whole neighbourhood starting from commerce but giving great importance to social and infrastructural issues. At the same time, *Washington Gateway* initiative was strongly supported by the community, with a wide involvement of diverse representatives and committees – business associations, religious leaders, artists, retailers, bank representatives and residents.

Thanks to the strong connection among all the stakeholders involved in the process, *Washington Gateway* has been really successful in the implementation of the regeneration strategy.

Probably the most remarkable factor has been the cooperation between the public sector and the non-profit organization itself. Since the initiative is part of the *Boston Main Streets Program*, the role of *BRA* has been definitely crucial. Nevertheless, the Main Street itself had a significant role in the decision making process, developing a strong and comprehensive vision with the involvement of the community and the main stakeholders. This “visioning” process has been assured thanks to a wide participation and a broad consensus, both made possible by the creation of an *ad hoc* Volunteer Committee – significantly, more than 22.600 hours of volunteered work helped to the accomplishments of the program.



Figure 1: *Downtown Boston and Washington Street before the urban redevelopment*
(Source: Brown, 2012; *Washington Gateway Main Street*)

Moreover, the special composition of the Board of Directors, with its high skilled staff also working in local organizations and in the City, was very important for partnership building.

It has to be highlighted the strategic role of public and private foundations and committees, helping in the redevelopment process. Once the interests of the private sector increased, *Washington Gateway's* Design Committee worked with developers to review proposals and to preserve historical, social and economic aspects of the area, matching different needs and solutions.

3.3 North Park Main Street and BID (San Diego)

North Park Main Street is an interesting case of different associations and varied initiatives in the same area; indeed, it is a BID – established in 1985 by the City of San Diego – and a Main Street affiliated with the National Trust for Historic Preservation – established in 1996, when the City selected the existing BID to be the pilot project for the national Main Street program. As a volunteer-based non-profit organization, *North Park Main Street* administers the BID (a non-profit organization itself) and promotes the development of the area while preserving its integrity and encouraging an urban pedestrian-friendly environment.

The reasons behind the public and private partners collaborating on the initiative are the diversified strategy promoted by the Main Street itself, the lack of adequate financial resources, the varied social and economic demands of one of the oldest community in San Diego, with a clear historical and cultural character, a strong vocation to become a vibrant and attractive area for young people, an on-going commercial decline.

Actually, *North Park Main Street* has been supported by an intense volunteer work, a strong involvement of the community and a solid partnership – involving the City of San Diego and the *Redevelopment Agency*⁵, almost 500 business and retailers, private developers and local organizations – in a joint effort to revitalize the whole neighbourhood starting from commerce but giving great importance to cultural issues.

A distinctive feature of the initiative is the strong connection between two non-profits (the BID and the Main Street) with different missions and tools but sharing the same Board of Directors. Indeed, while the BID was crucial for the involvement of local businesses paying an annual fee to support the enhancement of services, infrastructure, security, etc., the Main Street played the major role in involving the community, in supporting projects and programs in the area, in finding funds and grants for implementing the regeneration strategy.

On the other hand, the public sector was deeply involved in the physical redevelopment, while the community strongly supported the redevelopment process in its starting stage, also taking advantage from many professionals living in North Park (architects, planners, artists).



Figure 2: Some redevelopment interventions carried out by North Park Main Street

A significant role was also played by the *Community Planning Group*, a quasi-autonomous non-governmental organization – strategic in expressing the demands of the local community and acting as a go-between among the community, the private sector and the public authorities.

3.4 Dudley Street Neighbourhood Initiative

Dudley Street Neighborhood Initiative (DSNI) is a non-profit community planning and intergenerational organizing entity operating in the neighbourhood of Roxbury (Boston). One of the most famous initiatives of its kind in the United States, DSNI was formed in 1984 when elders as well as youth joined together in an effort to claim back their neighbourhood after a period of abandonment and despair. Ever since, it has been operating in the neighbourhood with social and economic targets.

At the basis of the actions and initiatives undertaken by DSNI is a close partnership with different actors and subjects that range from non-profit organizations to governmental agencies and other private subjects.

The rationale behind the various partners collaborating is that DSNI does not have enough financial resources to carry out all the initiatives proposed and needs collaboration and support from different actors. Thus, DSNI partners with different actors on the basis of the initiatives undertaken and promoted and does not set up privileged or specific partnerships.

It can be claimed therefore that its role is mainly to propose, put forward and support new initiatives which are carried out by other agencies.

Dudley Street Neighbourhood Initiative represents a unique case, under different points of view. Although it is a community-based organization and even though it has all the characteristics proper to a CDC, it is not a Community Development Corporation. This has certain advantages on the actions and initiatives proposed by the organization, especially in housing development schemes and in the achievement of the public good. Such characteristic of great flexibility allows DSNI to select the best partner on the basis of different criteria, goals to be achieved and human resources to involve.

Evidently, it can be claimed that DSNI as a community-based organization plays a crucial



Figure 3: The Triangle, main project area for DSNI Boston, in 1995 and 2010

role in urban planning and regeneration initiatives within the area. Its special status of eminent domain authority organization represents a unique case which can hardly be compared to any other case where a private organization is granted such a fundamental power for the planning activity. Its role within the community is very active and its involvement in almost all of the planning and urban regeneration projects undertaken within the neighbourhood ensures that the community interest is taken into consideration and it is a good example of non-profit community planning and organizing entities which reflect the general role that such organizations have within the USA.

4 Perspectives and open problems

As highlighted in the case-studies, within urban redevelopment policies and practices, innovation in PPP models has become increasingly important; the significance of partnerships between the public and the private sectors lies in the possibility to overcome dialectics that previously conditioned virtuous interpretations of the Urban Regeneration idea. In emerging scenarios, non-profit organizations may play a strategic role, when being able to achieve a balance between public and private interests and demands of the community. So, within the general framework of urban redevelopment strategies in US, reflections and case studies have been focused on the exploration of diverse “PPP architectures” re-considering the role of public and private stakeholders involved in the process.

It has been seen that a well-established PPP may support the redevelopment process strongly affecting its success, above all with respect to quality performance in providing social services and community facilities and in supporting local community involvement and empowerment in decision making processes.

Nevertheless, the investigation shows that in some cases strong partnerships and successful redevelopment processes have been possible when the central government and the public authorities promoted, encouraged and financially supported “ad hoc” non-profit organizations.

However, the leading role of public authorities supporting specific interests might be somewhat meddling. If a strong partnership has the potential to be a key factor for the redevelopment processes, this potential may be undermined by an institutional framework that hinders the ability of the involved stakeholders to make choices and to address the main challenges. In other words, under certain circumstances PPP may be highly restrictive, representing a narrow composition or being opaque in its dynamics.

The role of the public sector was crucial for *Downtown Boston BID* where the PPP championed by the public authorities was the decisive condition to overcome long-standing difficulties and repeated failed attempts; but such an institutional involvement was also responsible for an incomplete support by the private sector. Indeed, when in 2010 the BID petition was presented to the City Council, it was signed by at least 60% of the property owners in the district, but some of the most important stakeholders and owners refused to join the non-profit organization – therefore they represent a significant drawback for the BID’s strategy and an important restriction in the PPP itself.

On the other hand, as far as the involvement of the private and the public sectors, case studies illustrate different economic implications.

As pointed out in the literature, often private stakeholders are the key factor for providing substantial levels of funding to non-profits. In *Washington Gateway Main Street*, economic interests in constructing and restoring commercial and residential buildings called for the

involvement of the private sector - relevant since the very beginning of the project both financially and operationally -, while the public authorities were in charge of convincing private stakeholders to invest in the neighbourhood and of deciding about publicly owned vacant land and parcels to be restored.

On the contrary, *North Park Main Street* shows a completely different dynamic. Indeed, the public sector was the financial leader in the physical redevelopment – the City of San Diego and the *Redevelopment Agency* funded most of the interventions carried out in the area – but the public involvement was just a consequence of the community strongly supporting the redevelopment process and overcoming the initial resistance of the City of San Diego.

Finally, it has been seen that in some cases the non-profit organization is the real driving force for the regeneration process, exceeding the role of private and public actors and decisively affecting the PPP.

In the *Dudley Street Neighborhood Initiative (DSNI)*, the fragile balance between public and private sectors was managed by the “leading” role of the non-profit organization and the success of the redevelopment process was based on the involvement of multiple and varied stakeholders, with a scarce presence of public authorities. The latter did not take part in the decision-making process and they were not proactive, while being involved in the initiatives depending on the general goals, on the general financial conditions, on the specific contribution the public sector may produce for the non-profit strategy.

In such cases, when social problems are both the critical issues and the major driving force for the regeneration process, the possibility of adopting a flexible partnership model – with a partnership composition depending on the specific project, with varied stakeholders bringing different expectations to the process and different emphases to their conceptions of how the process should work – may be crucial.

Interesting exception to the ordinary Community Development Corporation model, DSNI is a “variable geometry” non-profit organization, a particular “hub” which identifies from time to time different partners for implementing single projects. A sort of horizontal platform with a stimulating role for endogenous and exogenous stakeholders and agencies.

The Main Street (MS) model represents a significant contribution for “integrated area-based PPP” as well. Its effectiveness is closely linked to the critical mass of available budget as the Boston Washington Gateway and the San Diego North Park experiences show.

Both in CDC and MS models sometimes the hybridization of the original “Civic law” model with the “Common law” one, can allow the Public sector to be seen in a mutating role, from a “resource provider” to a “resource broker”, a facilitator of investments and general involvement of plenty of actors potentially interested in the regeneration process. In this sense, CDC and MS projects cannot do without the direct and active involvement and cooperation of the whole local community in a flexible context of regeneration strategies.

References

- Akintoye, A., Beck, M. and Hardcastle, C. (eds 2008) *Public-Private Partnerships: Managing Risks and Opportunities*, Oxford (UK): Blackwell Science Ltd.
- Bailey, N., Barker, A. and MacDonald, K. (1995) *Partnership Agencies in British Urban Policy*. London: UCL Press.
- Barnekov, T., Boyle, R., and Rich, D. (1989) *Privatism and urban policy in Britain and the United States*, Oxford: Oxford University Press.
- Brown, E. (2012) "New Tower Would Fill Boston's Scar", *The Wall Street Journal* [on-line] 13th February. Available at: <http://online.wsj.com> [Accessed: 13th February 2012]
- Clarke, J. (2004) "Dissolving the public realm? The logics and limits of neo-liberalism", *Journal of Social Policy*, Vol. 33, No. 1, pp. 27-48.
- Coaffee, J. and Healey, P. (2003) "'My Voice: My Place': Tracking Transformations in Urban Governance", *Urban Studies*, Vol. 40, No. 10, pp. 1979-1999.
- Cruikshank, B. (1994) "The will to empower: Technologies of citizenship and the war on poverty", *Socialist Review*, Vol. 23, No. 4, pp. 29-55.
- Fainstein, S. S. (2001) *The City Builders. Property Development in New York and London, 1980-2000*, 2nd ed. Rev., Lawrence: University Press of Kansas.
- Goodpaster, G.S. (1968) "An introduction to The Community Development Corporation", *Journal of Urban Law*, No. 46, pp. 603-665.
- Healey, P. (1996) "Planning through debate: The communicative turn in planning theory", in Campbell, S. and Fainstein, S. S. (ed.) *Readings in planning theory*, Oxford: Blackwell.
- Healey, P. (1997) *Collaborative planning. Shaping places in fragmented societies*, London: MacMillan.
- Healey, P. (2007) *Urban complexity and spatial strategies: towards a relational strategies for our times*, London: Routledge.
- Jacobs, B. D. (1987) "Non-profit Organizations and Urban Policy in Britain and the USA", *Public Policy and Administration*, Vol. 31, No. 2, pp. 31-45.
- Kokx, A. (2011) "Partnership in Urban Restructuring: Building Long-term Relationships or a Pragmatic Managerial Tool? The Dutch Experience", *International Journal of Urban and Regional Research*, Vol. 35, No. 5, pp. 1026-1047.
- Kooiman, J. (1993) *Modern governance, new government-society interactions*, London: Sage.
- Lawless, P. (1991) "Urban policy in the Thatcher decade: English inner city policy, 1979-90", *Environment and Planning C: Government and Policy*, No. 9, pp. 15-30.
- Mac Donald, J., Stokes, R. and Bluthenthal, R. (2010) "The Role of Community Context in Business District Revitalization Strategies. Business Improvement Districts in Los Angeles", *Public Performance & Management Review*, Vol. 33, No. 3, pp. 436-458.
- Mitchell, J. (2001) "Business Improvement Districts and the "New" Revitalization of Downtown", *Economic Development Quarterly*, No. 15, pp. 115-123.
- Newman, J. (2001) *Modernising governance, New Labour, policy and society*, London: Sage.
- Newman, J. (2005) "Enter the transformational leader: network governance and the micro-politics of modernization", *Sociology*, Vol. 39, No. 4, pp. 717-34.
- Osborne, S. P. (2000) *Public-Private Partnerships: Theory and Practice in International Perspective*, London: Routledge.
- Rathgeb Smith, S. (2000) "Nonprofit Organizations in Urban Politics and Policy", in Hula, R. C. and Jackson-Elmoore, C. (ed.) *Nonprofits in Urban America*, London: Quorum Books.

Reuschke, D. (2001) *Public- Private Partnerships in Urban Development in the United States*, NEURUS Network of European and US Regional and Urban Studies. Available at: <http://www-sre.wu-wien.ac.at/neurus/reuschke.pdf>

Rhodes, R. (1996) "The new governance: governing without government", *Political Studies*, Vol. 44, No. 4, pp. 652–67.

Roberts, P. and Sykes, H. (2006) *Urban regeneration*, London: Sage.

Sagalyn, L. B. (2007) "Public/Private Development", *Journal of the American Planning Association*, Vol. 73, No. 1, pp. 7-22.

Swyngedouw, E. (2005) "Governance innovation and the citizen: the Janus face of governance-beyond-the-state", *Urban Studies*, Vol. 42, No. 2, pp. 1991-2006.

Taylor, M. (2007) "Community participation in the real world: Opportunities and pitfalls in new governance spaces", *Urban Studies*, Vol. 44, No. 2, pp. 297-317.

Ward, K. and Imbroscio, D. (2011) "Urban Politics: an Interdisciplinary Dialogue", *International Journal of Urban and Regional Research*, Vol. 35, No. 4, pp. 853-71.

Notes

- 1 This paper is related to the dissemination of the EU research project "CLUDs" (Commercial Local Urban Districts), Seventh Framework Programme, Marie Curie Actions People IRSES, 2011-2014 (www.cluds-7fp.unirc.it). The general goal of the CLUDs research project is focused on exploring the potential of new tools for urban regeneration through the strategic role of small retails - handcraft and typical food - in reinforcing the sense of community, reducing transportation costs and contributing to the creation of attractive urban environment, thus increasing private investments. The main axes of the research program deal with the evolution of innovative "Public Private Partnership" forms and "Urban-rural" relationships for regenerating urban deprived areas and their "territorial milieu". The program implementation is based on networking four EU universities (Mediterranea Reggio Calabria, "Sapienza" Roma, Aalto Helsinki, Salford Manchester) and two USA universities (Northeastern University Boston and San Diego State University).
- 2 Business Improvement Districts (BIDs) belong to the wide range of policies internationally implemented to improve the economic vibrancy of urban communities and to foster revitalization in urban areas while promoting an innovative approach to the delivery of elementary yet consequential public services (Mac Donald et. al, 2010; Mitchell, 2001).
- 3 Launched in 1977 by the National Trust of Historic Preservation, *Main Street Approach* is «a preservation-based economic development tool that enables communities to revitalize downtown and neighbourhood business districts by leveraging local assets – from historic, cultural, and architectural resources to local enterprises and community pride» [National Trust of Historic Preservation].
- 4 *Community Development Corporations* (CDCs) are known throughout the United States as non-profit organizations which aim at community social and economic development in low income and distressed communities. The use of CDCs function as «a strategy designed to solve many of the problems of discrimination, poverty, lack of citizen participation, and the failure of governmental institutions» (Goodpaster, 1968, p. 645).
- 5 The *Redevelopment Agencies* of the City of San Diego (Centre City Development Corporation CCDC, and Southeastern Economic Development Corporation, SEDC) have been dissolved in 2012 by the Governor of California and the City of San Diego, serving as their successor agency, has assumed the former assets, rights, and obligations under the California Community Redevelopment Law. At the moment, the former Agency's affairs and actions are carried on by *Civic San Diego*, a city-owned non-profit that is the entrepreneurial development partner for targeted urban neighborhoods.

Online engagement – linking their digital world to ours

Marissa POWELL, Arup, Australia

1 Introduction

People who attend stakeholder and community engagement activities often fit into one of three categories – retirees and people with time of their hands, people who stand to lose something of value to them and people who are passionate about a cause or issue (and your project just happens to fit into this category). They are the ultra-motivated, the people who turn up to meetings and displays and unfortunately the people who skew our engagement data as they are not representative of the broader population.

The rest of us sit in the “I should get involved but I’m too busy”, the “that’s kind of interesting, but not enough to make me do anything”, the “I planned to go but I forgot” or the oblivious to the entire situation category. It’s this larger group of people that we’re missing through traditional approaches to engagement and they are the most important to ensuring representative input is fed into our planning processes. To engage these people we have to understand how to make it easy for them to participate in the discussion especially when they are usually time poor, they want to give and get information quickly and they now carry their digital life with them wherever they go.

The other side of the story is that it’s time consuming, and often difficult, to translate rafts of qualitative data gained through engagement processes into something meaningful that we can use to inform planning decisions.

To address both these issues, an online e-engagement tool named Collaborative Community Map was developed to give stakeholders the opportunity to provide meaningful input into spatial planning processes. It was borne out of a desire to gather a more representative data set from stakeholders by allowing people to participate in engagement activities at a time and place that suits them. It is a light weight mapping application that is viewed in a standard internet browser and uses the Google Maps interface as its source of mapping data. It allows people to participate in engagement activities and provide information from their own computers, thus broadening the reach of engagement programs. It gathers spatially located data to assist project teams in mapping constraints and concerns associated with planning and design proposals by enabling stakeholder comments and their associated locations to be mapped. These can then be drawn into a GIS environment for further analysis and visualisation.

This paper explores a number of case studies where the Collaborative Community Map was used during planning processes. It shows how by linking their digital world to ours we have gathered more representative datasets, made the engagement process more transparent, broadened the reach of our engagement program and gained valuable spatial data which has helped us to better understand the places and spaces we are planning. This approach is applicable to any spatial planning process.

Visit www.collaborativemap.org to view the mapping tool.

2 Engaging with stakeholders and the community

We plan places for people, so it makes sense that the people we are planning for are given the opportunity to input into the planning process. As society evolves we are becoming more interested in and able to make our voices heard. As planners it is important that we harness this non-technical expertise to improve our projects as we progress planning, rather than just standing and defending our expert choices against public opposition once the planning process is complete.

We operate in planning systems that usually have some form of legislated stakeholder and/or community consultation process wrapped around them. In my experience, most of these legislated processes occur at the end of the planning process and by only doing what is required we are missing the opportunity to improve our planning.

Arnstein's seminal paper 'A ladder of citizen participation' (1969) has shaped the practice of modern public participation. Her approach showed a spectrum of citizen involvement from manipulation through to citizen control. This ladder has further evolved in recent years and still forms the basis of the International Association for Public Participation's (IAP2) Public Participation spectrum (www.iap2.org) as shown in Figure 1. The IAP2 spectrum is the current dominant framework for public participation. The relationship between the two engagement outlines is shown in Table 1.

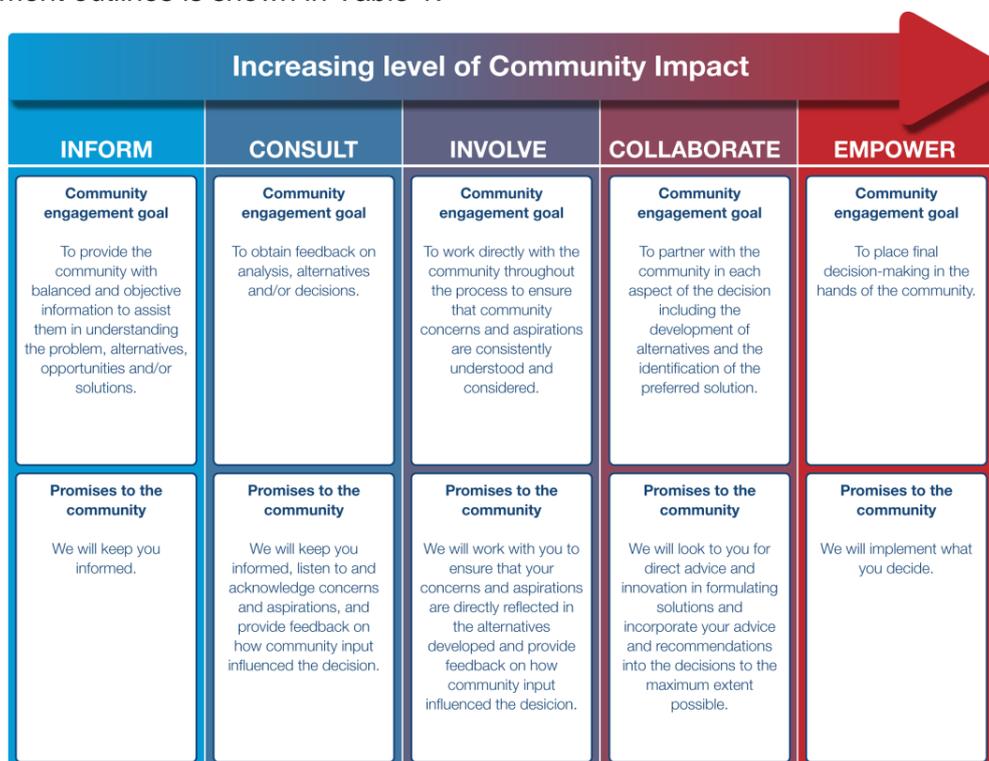


Figure 1: IAP2 Public Participation Spectrum ©

Ladder of citizen participation (1969)	IAP2 Public Participation Spectrum (2004)
Citizen control	n/a
Delegated power	Empower
Partnership	Collaborate
Placation	Involve
Consultation	Consult
Informing	Inform
Therapy	n/a
Manipulation	n/a

Table 1 Ladder vs. spectrum

We've moved on from a time where people could be manipulated into thinking in certain ways or just allowed to vent as a form of therapy, into a space where those who are interested and willing to get involved can have a more meaningful discussion about the issues at hand. It could even be argued that the 'inform' level of the IAP2 spectrum is no longer accepted as a suitable means of engaging with people about planning projects.

At the same time that people's expectations are changing about how they should be able to participate in planning processes, people's access to information via the internet and their constant connectedness to social media presents opportunities to engage in new ways.

Engaging people online could fit into any level of the IAP2 spectrum, it just depends how it is undertaken. Collaborative Map is often used as a *consult* or *involve* level engagement tool to gather information from people about what they need/want prior to planning starting or to gather feedback on plans once they have commenced. That said, it is one tool in the overall engagement toolkit and does not replace face-to-face engagement methods.

3 About Collaborative Community Map

Collaborative Map is an online engagement tool and enables us to gather a more representative data set from stakeholders by allowing people to participate at a time and place that suits them. Through using Google Maps, the familiar interface allow people to engage quickly with the tool and use Google Map's features such as street view as part of the engagement process. More information such as design options or planning layers can be loaded on to the map depending on the level and type of engagement required. The comments that are placed with the tool can also be linked with social media such as Facebook and Twitter to further broaden the reach of stakeholders.

The data that is gathered is spatially referenced and directly assists project teams with mapping the constraints and concerns associated with the planning and design proposals from the stakeholder comments. These comments can be drawn into a GIS environment for further analysis and visualisation.

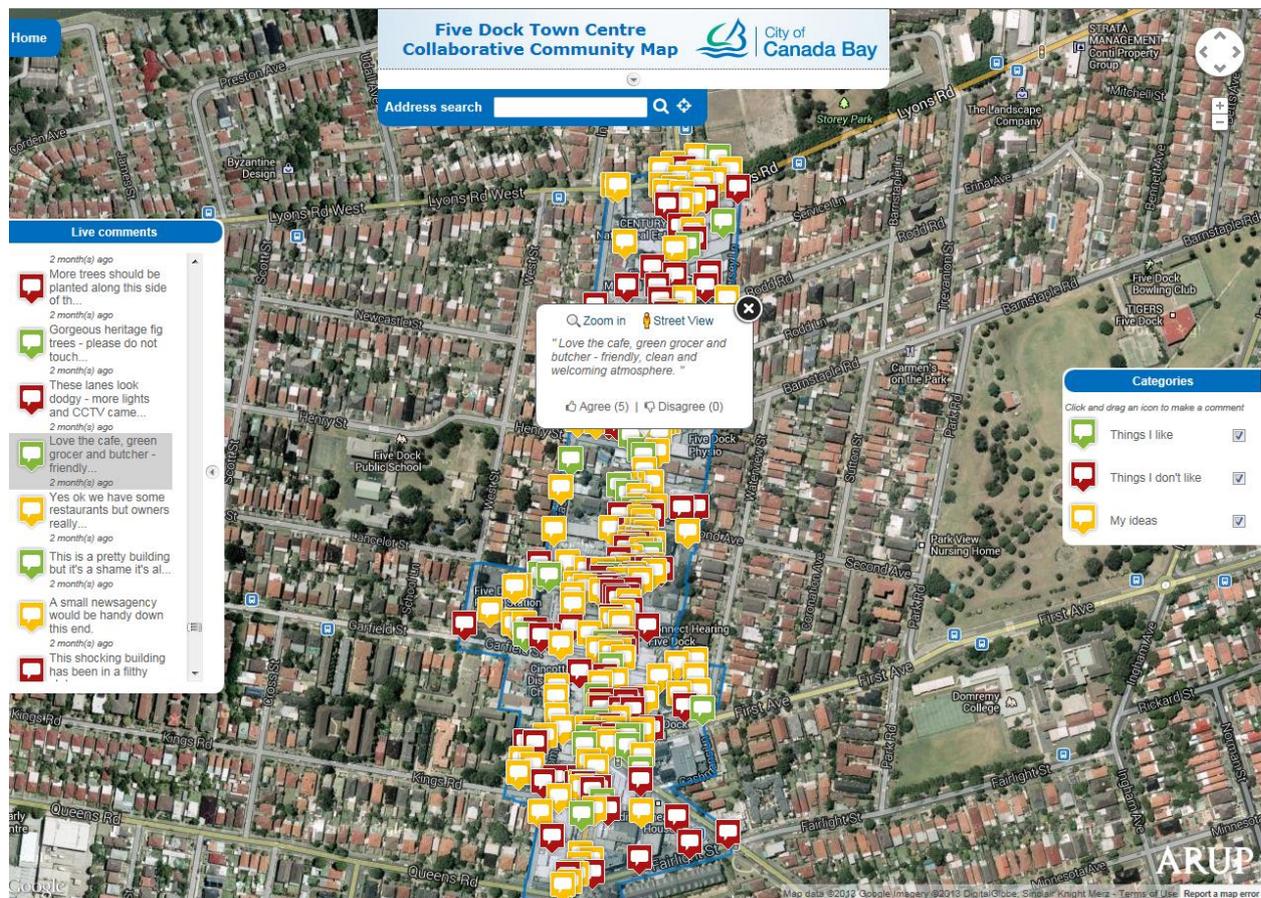


Figure 2: Screen shot of Collaborative Community Map

4 Collaborative Community Map case studies

The mapping tool has been used for a number of applications including master planning, landscape master plans, initial information gathering during preliminary design phases, parking, traffic and pedestrian studies as well as for the display of concept designs for linear infrastructure.

4.1 Master planning / urban design / landscape master planning

For this type of project the tool is used multiple times throughout the design process. It is first used to gather broad feedback about the area that is being planned, for example what people like, don't like and any ideas they may have for the area. This information helps planners to better understand the space from the perspective of users and to understand what will and won't be accepted in relation to changes to the space.

Initial options for the design of the space are then uploaded into the tool to show people what could be done. Comments can be collected on all comments and analysed spatially to understand what people liked and didn't like about the options.

Once a final option has been decided, this can again be displayed for final comments.

An example of this process is shown below for the Bald Hill Reserve Landscape Masterplan. Community engagement began by asking people to tell us what needed improving, what was important and what their ideas were. This information was used as an input into the overall site analysis process to help shape options for the masterplan. Three options were displayed to the community for the site and comments related to each option were gathered and analysed. The final option was a mix of aspects from the three options. The final draft Landscape Masterplan was again uploaded to the tool for final comments from the community. This stage of engagement was the formal 'public notification period' for the project.

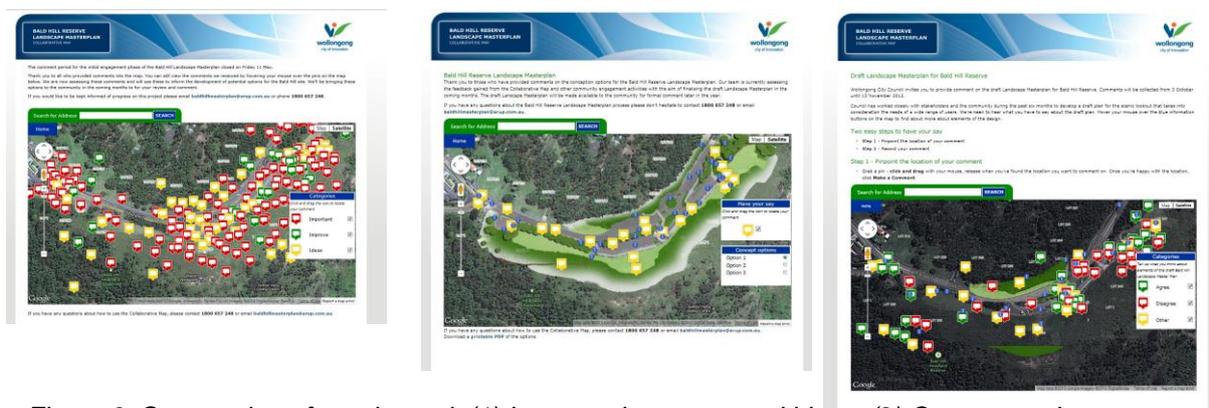


Figure 3: Screen shots from the tool: (1) Improve, important and ideas, (2) Concept options, (3) Final draft Landscape Masterplan

4.2 Parking and transport studies

The tool has been used on a number of transport related studies. For these projects it is interesting to gather users' perceptions of the transport environment in a spatial format and compare this with actual speed, accident and congestion data. The comparison shows areas where perception doesn't match the data which shows the team that they need to gather more (or more up-to-date) data or work with the community to understand this perception.

An example (as shown in Figure 3) of this is a traffic study where there was a perception of speeding occurring on a local street, but the data was not showing this as a fact. It was determined that additional data collection was required to ensure that the data was accurate for this location.

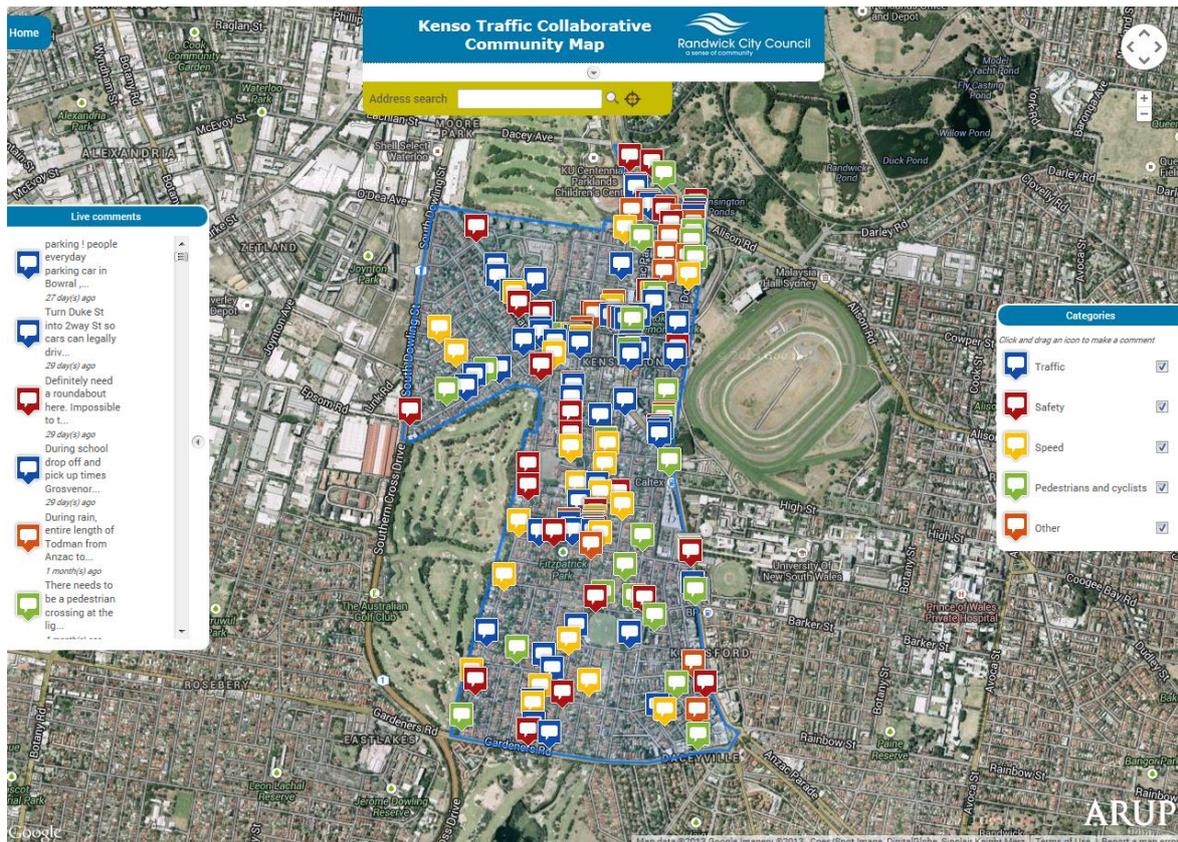


Figure 3: Screen shot of a transport study Collaborative Community Map

Another example (shown in Figure 4) is of a parking study which utilises the collaborative map and analysis to display the conflicting opinions of user groups, in this case paying for parking. These diagrams were used in workshops to work with different users to understand the different needs come to an equitable solution.

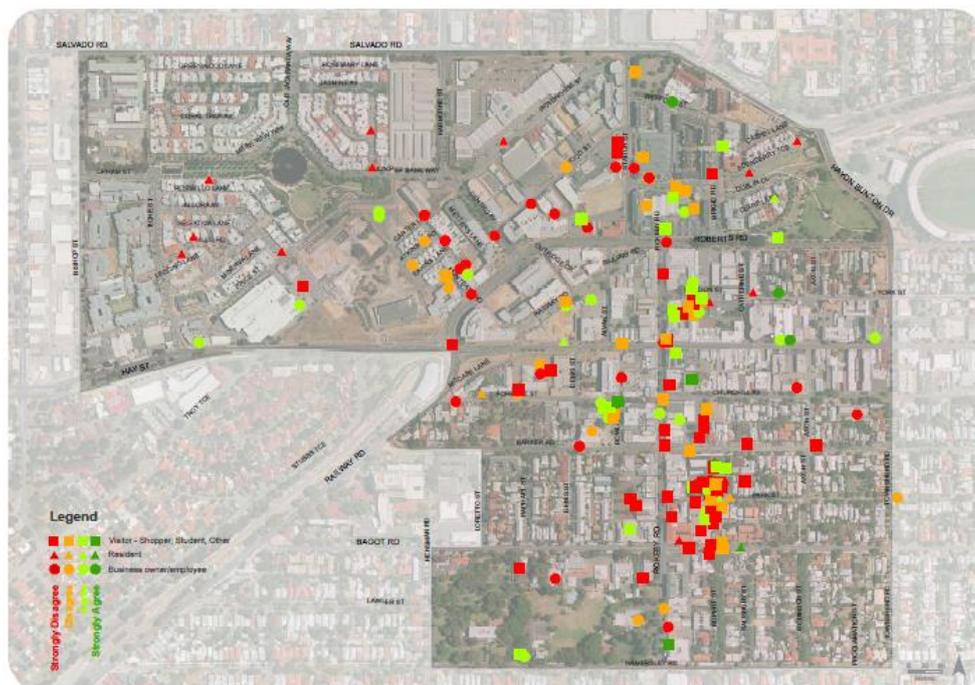


Figure 4: Screen shot of a transport study Collaborative Community Map

4.3 Infrastructure design

The tool has also been used to show infrastructure design to the community. This has been achieved by bringing CAD designs into a GIS format and uploading these into the tool as shown in Figure 5. This allows people to see and comment on proposed designs. These comments can then be used to refine design as it progresses.

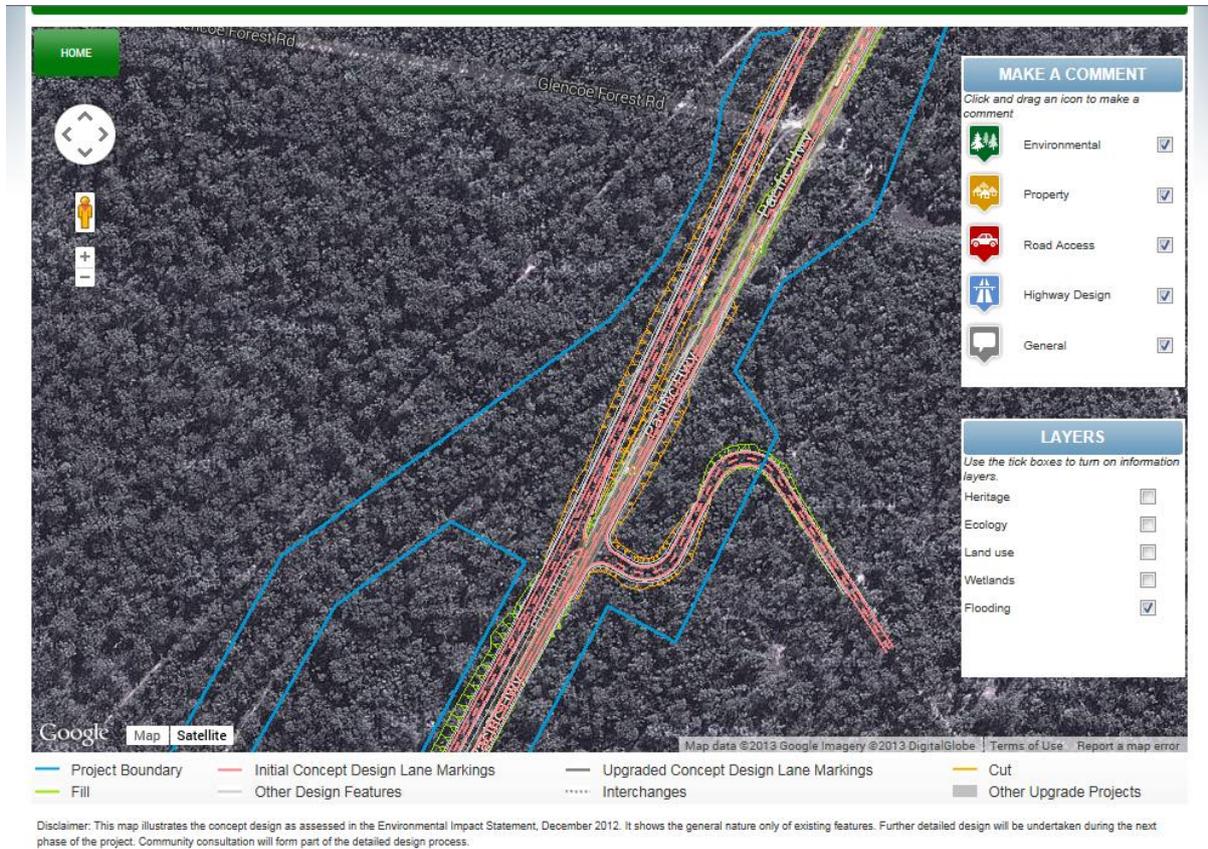


Figure 5: Screen shot of an infrastructure design Collaborative Community Map

5 Reporting from Collaborative Community Map

The key benefit of the mapping tool to the planning practice is the ability to spatially map community comments to see trends and compare this information with other spatial datasets. Figure 6 shows comments input by the community on a road planning project. Figure 7 shows these comments mapped in GIS.

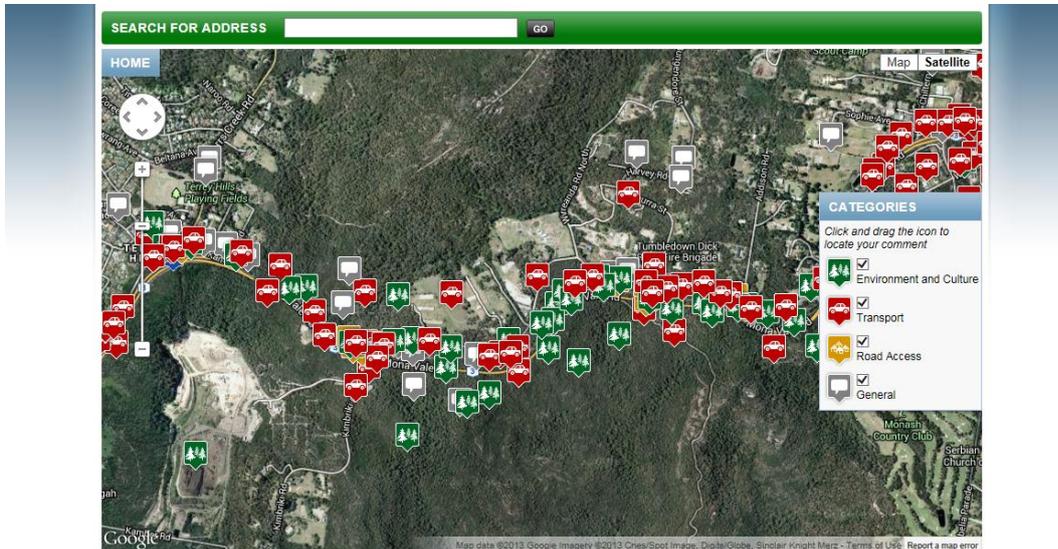


Figure 6: Data input by the community



Figure 7: Comments mapped in GIS

By mapping these comments spatial clusters can be seen. Figure 8 shows a 'hot spot' analysis of 'environment and culture' comments. These comments align will with heavily vegetated areas of the corridor.

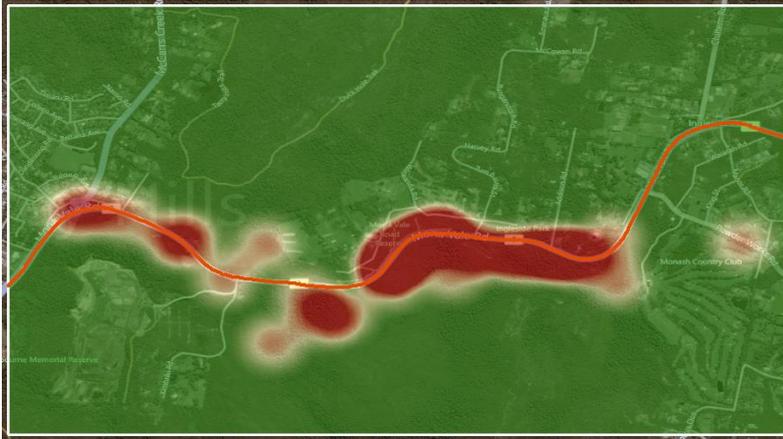


Figure 8: Hot spot analysis of 'Environment and Culture' comments from Figure 2 map.

Figure 9 shows a 'hot spot' analysis of 'transport' comments. These comments align will with steeper areas of the corridor where trucks climbing at slow speeds are considered to be a significant traffic problem.

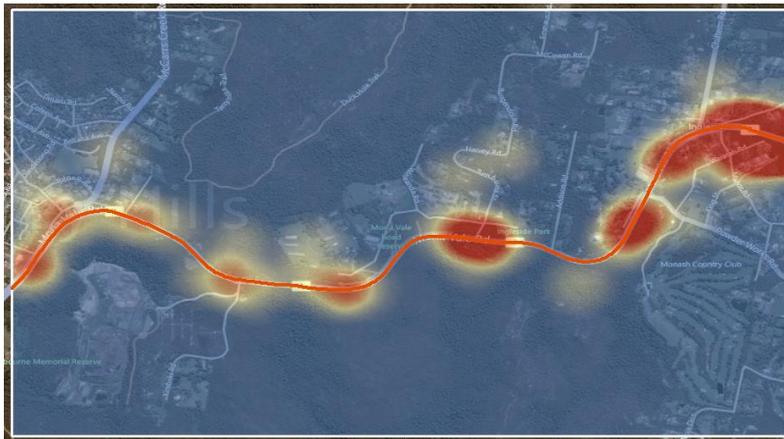


Figure 9: Hot spot analysis of 'Transport' comments from Figure 2 map.

Figure 10 shows a 'hot spot' analysis of 'road access' comments. These comments align will intersections throughout the corridor.

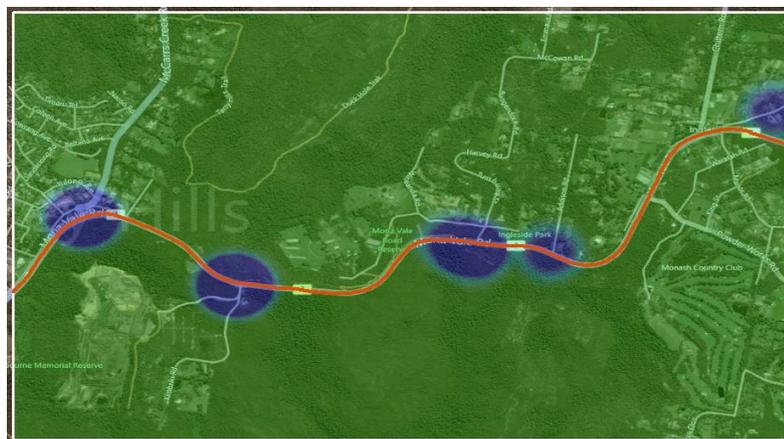


Figure 10: Hot spot analysis of 'Road Access' comments from Figure 2 map.

The analysis of comments from the community for this map deployment showed that community comments were very much in line with the technical analysis of the corridor. This is important as it shows that people who use the corridor are experiencing the issues that from a technical analysis perspective we would expect.

6 How this is advancing the planning practice

As planners we need to better understand the places we are planning for. By seeking information from the people who live/work/use these places we are reducing our assumptions and therefore the risk that we miss something that would mean our plans aren't accepted by stakeholders and the community.

Utilising online engagement tools not only allows us to broaden the reach of engagement activities and involve more people in the process, but allows us to output this information in ways that assist the technical analysis and planning process.

The ways that tools like Collaborative Community Map are benefitting the planning practice:

- *Engagement is more efficient* – online engagement is cost effective and efficient. Setting up and analysing the output of online tools is much cheaper than trying to reach the same number of people via traditional face-to-face means.
- *Engagement activity is more transparent* – people can see what others are saying and that there may be different positions on the issue. Often we see an action group form around an issue and their voice is the only one picked up in media reports and heard in public forums.
- *Engagement outputs are easier to 'sell' to technical colleagues* – It is much easier to 'sell' the benefits of an engagement process when the outputs can be viewed in a format compatible with other technical data. It gives this information more credibility in the process.
- *Engagement can happen at any time* – people can use online engagement tools at any time, from any place. Online engagement allows them to participate as they please instead of us dictating when they can participate in the process.
- *Engagement outcomes can be shown spatially* – engagement inputs and how they have helped to shape planning outcomes can be fed back to stakeholders and the community in a spatial format. This clearly shows where their inputs have / have not been adopted and we can explain why this has occurred.
- *Engagement outcomes show us the areas people are most interested in* – the spatial outputs will show areas that people are most interested in. This helps us to focus our attention on these areas as required.

7 Conclusion

The use of spatial mapping for stakeholder and community engagement activities is an emerging trend that enhances our ability to integrate engagement inputs into planning processes. By using these tools we have gathered more representative datasets, made the engagement process more transparent, broadened the reach of our engagement program and gained valuable spatial data which has helped us to better understand the places and spaces we are planning.

8 References

Arnstein, S. R., 1969. A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, July.35(4).

International Association for Public Participation , 2013. *IAP2's Public Participation Spectrum*. [Online] Available at: www.iap2.org.au [Accessed 2013].

Legitimising Politics of Influence through Participatory Planning Practices in Delhi

Poonam PRAKASH, School of Planning and Architecture- Delhi, India

1. Introduction

Participation has become the buzzword currently. Every policy, programme and scheme calls for participation. Public participation is considered to produce better decisions and improved project outcomes. It is a first step to influence decisions. Notion of power and conflict therefore, is inherent to the concept of participation. Arnstein (1969) sees it as a process of redistribution of power amongst the have-nots. It also is linked to the idea of an empowered citizen who can contribute more meaningfully in the society. Benefits of participation can include create a possibility of co-creating learning and shared control, a sense of ownership and thereby better implementation and lesser conflict over the long term (Cohen and Uphoff, 1980, Healey, 1997)

In the present context of reforms, with efficiency of outcomes as primary concern, the World Bank sees it as a process of 'stakeholder participation' (World Bank, 2000). Stakeholder as a term was initially more closely associated with corporate or business entity. Slowly this replaces the term citizen in which the perception of political and power is embedded. Participation has been sanitized into stakeholder participation where 'user participation and marketisation of service delivery' will ensure better outcomes (Kamath and Vijayabaskar, 2013). Next section of the paper explores the idea of stakeholder participation in two interventions by the international agencies in the forms of local area and city development plans.

It is generally agreed that any meaningful participation requires at the least, availability and accessibility of information, some prescribed form of responding to the information and an equal opportunity to all individuals for their views to be considered. It is also vital to understand the process of who participates, in what and for whose benefit (Cornwall, A., 2008)

Authors have pointed to the downside of participation (Cooke, B. and Kothari, U., 2001, Kaza, 2006). There is a huge gap between the universally accepted rhetoric of participation and empowerment and unjust practices of participatory government. It is also seen a highly contested concept, since the idea of singular public interest is a myth and the dynamics of local interests display uneven power dynamics. Individual rationalities in most cases are unlikely to produce a collective outcome which is rational. The answers to the issue of representation, power and process of decision making continue to remain elusive in participatory practices.

In planning, provision for participation has existed in town planning laws in some form. Its practice though has been untidy one (Day, 1997). In India, too the town planning acts provide for citizen participation in plan preparation and its modification. Third section and fourth section of the paper examine the process of participation plan preparation and modification and tries to show that stakeholder participation is not supplementing but gradually substituting rational comprehensive mode of planning. Stakeholder consultation in planning, in its current form, is more prone and open to legitimizing powerful interests rather than creating conditions for deliberation, conflict resolution and consensus building.

2. Mainstreaming 'Stakeholder Participation' - Role of International Agencies

As part of the reforms agenda pushed by the international agencies, one of the main focus areas is the reforms in regulatory mechanisms. This is also seen in propagating amendments in planning and development laws in India. In 2003, the USAID through the Indo-US Financial Institutions Reforms and Expansion Project-Debt Market Component (FIRE(D)), prepared a 'consensus paper' to simplify building byelaws in Delhi. It was based on the premise that illegal developments in Delhi were mainly due to inadequate building and planning regulations, which do not match the 'market potential' of the area. These inadequacies were also due to lack of 'local stakeholder participation' in the plan preparation (FIRE(D), 2009). This consensus paper for more 'flexible planning and building byelaws' recommended amendment to the Delhi Municipal Corporation Act, governing the Municipal Corporation of Delhi (MCD). One of the main amendments was inclusion of provision to prepare local area plans through participationⁱ.

No such amendments has been made till date. FIRE(D), however, was able to develop the local area plan guidelines and supposedly pilot them in five different parts of Delhi for preparation of 'Local Area Plans' in 2005. Out of three phases of the project, one of the phase of the plans required participation for the purpose of developing a vision and feedback. The Project Note (2009) providing an example of one of the areas out of five piloted areas, acknowledged the resistance faced by the consultants during this consultation and phase. However, without examining or documenting the manner of identification of stakeholders, nature of participation, and process of conflict resolution in the pilot projects, it continues with enthusiasm about participation; "Local Area Planning is a FIRE(D) innovation for addressing the unplanned and illegal urban development rampant in India cities. By combining neighbourhood level data with stakeholder participation, a Local Area Plan proposes a more realistic and cohesive development alternatives. (FIRE(D), 2009)".

Efforts to mainstream stakeholder participation were not restricted only to local level. Simultaneous to the agenda of local level participation through 'stakeholders', a major reform agenda in mission mode called Jawaharlal Nehru Urban Renewal mission (JnNURM) at the national level was launched by the Prime Minister of India in December 2005 for sixty three cities with a budget of Rupees 500 billion over a period of seven years. (Government of India, undated). There were various components of the mission but one that is of particular relevance here is the preparation of 'City Development Plans'. City Development Plans (CDP) were to be prepared for all the sixty five cities through stakeholder consultations.

City Development Plans were very similar to City Development Strategies (CDS) promoted by the World Bank and UN Habitat with strong focus on stakeholder analysis and stakeholder workshops (Grant thronton,2011).ⁱⁱ According to the mission guidelines, the CDP was to be a comprehensive document for 'urban perspective framework' for twenty to twenty five years within which detail projects were to be prepared. The guidelines made no reference to the fact that in all the states in India town planning and or Development Acts were in existence for preparation of statutory plans providing urban framework for twenty to twenty five years. City Development Plans for all the sixty five cities were prepared through stakeholder workshops and hardly any reference was made to the statutory plans already in existence in most of these cities.

An appraisal of the JnNURM by Grant Thronton, India (2011) appointed as an appraisal agency has criticised the consultations while preparing the CDPs. According to the report, consultations with the poor were limited even though the reforms were targeted at them. No consultations were held at pre-plan finalisation stage even though the purpose of the consultation was to develop the vision for the city through participation. The report

goes on to state that “the stakeholders had to accept the plan without consultation.” The reports were available only in English and even then it was difficult to comprehend the proposals by whosoever participated. It further highlights the disconnect between master plans which are statutory plans and the CDPs which were seen only as investment plans. The process of these workshops in the form of information made available, identification of stakeholders and who all attended the workshops has been mostly missed in preparation of the city development plans.

From the appraisal of the consultation mechanism, it would seem that each of the CDP report included a chapter on consultation as a requirement and presented the process as neat and depoliticized process without any conflicting and contested interests, providing a unanimous vision of city. Review of the chapter on Community Consultation in the City Development Plan of Delhi shows organization of half day workshops on two days as stakeholder consultation with various technical persons including government officials in which total of one hour each day was spent on sectoral discussions and forty five minutes for open house discussions as inputs to the vision for a city of 15-16 million population. What is more revealing is the identification of issues from the focus group discussions held with selected few of the ‘communities’ like slums, JJ cluster etc. All the issues documented in these discussions relate to service provision. There is no discussion regarding the tenure status, rehabilitation or implementation of their entitlements according to housing provisions in the statutory plan (Department of Urban Development, 2006).

City Development Plans have by now lost their sheen, but the stakeholder consultations have persisted. International organizations like the World Bank, UN-Habitat, USAID etc. have played instrumental role in mainstreaming ‘stakeholder consultation’ form of participation which appear neat and depoliticized. Following sections provide a snapshot of the increasing focus on participatory planning through stakeholder consultation mode. It would seem that this mode is slowly substituting conventional mode of planning in which opportunities for citizen participation were included by law raising some uncomfortable questions. These examples indicate benefits of this mode of participation accrue more to the powerful groups rather than achieving any redistribution of resources or increase in influence of the disadvantaged groups.

3. Statutory Planning Process in Delhi – Provision for Mandated Citizen Participation

Planning in Delhi is currently governed by Delhi Development Act, 1957. Under the DDA Act, the Delhi Development Authority (DDA) is required to prepare master and zonal plans to ‘secure planned development of Delhi’. The first Plan prepared for twenty-year perspective up till 1981 was subsequently revised two times for the perspective year 2001 and 2021. Currently, review of the Master Plan 2021 is ongoing in Delhi. Any modifications to the plan requires a statutory process of issuing of public notice inviting objections/suggestions for a stipulated period of time. All the objections/suggestions are required to be considered. It is only after this process of public participation, modifications to the plan can be made.

Draft Master Plan for Delhi for the perspective 2021 was notified and placed in public domain for a period of ninety days in the first quarter of 2005, inviting objections/suggestions by the public. It received about seven thousand objections/suggestions. A Board of Enquiry and Hearing was constituted for dealing with objections and suggestions received. It held four meeting to hear around six hundred objections/suggestions and held eighteen internal meetings to prepare the report. In April 2007, Delhi Master Plan for 2021 was notified. Example of manner of participation in modification of mix use provisions in the Master Plan 2021 provides interesting insights in the participatory planning process.

3.1. ***Subversion of statutory provisions for participation – Case of Mix Land Use Provisions in Delhi***

Permissibility of commercial activities in residential premises was introduced in restricted manner in the plan of 2001 for the first time. Its intention was to allow particularly low income families to supplement their incomes through limited commercial activity (Government of India, 1990) The draft master plan for 2021 continued with the provisions of mix use for restricted commercial use in residential premises subject to certain conditions. These provisions were to change dramatically within few months of the plan being placed in public domain in early 2005.

In December 2005, on a public interest litigation filed in 1985, Supreme Court ordered sealing of all those commercial activities in residential premises that were in violation of the master plan of 2001. This led to all round protests by trader associations, representatives of political parties and others (The Hindu, 2005). In response to these protests by the traders and amidst the process of finalisation of the MPD 2021, the Ministry of Urban Development, central ministry, announced formation of a committee known as 'Tejinder Khanna Committee' in February 2006 to comprehensively review the issue of mix use. Composition of the committee included two members as experts and both were also consultants in the preparation of the draft master plan for 2021 already in the public domain, thus creating a very interesting situation whereby same experts would be taking two different positions on a same issue.

The terms of reference of the committee were to make an assessment of the magnitude and types of violations and suggest a feasible strategy for the same including changes in the structure and accountability of existing enforcement machinery (Ministry of Urban Development, 2006a). The report in its findings stated that large scale percentage of residential area is under misuse without actually providing data. Details of surveys or sources for various conclusions were missing. Without evaluation of the implementation of earlier mix use provisions in the master plan of 2001 the report recommended up-scaling of mix use provisions on various roads in the city.

'Stakeholder participation' had by now become fashionable and Tejinder Khanna Committee also took recourse to such participation. The committee issued a so called public notice inviting members of the public with special invitation to representative bodies/interest groups/non-governmental organisations in Delhi to share their views on the issues contained in the terms of reference. It received representations of approximately 490 Non-governmental organisations/interest groups/VIPs/Government agencies. Amongst this the committee chose to invite only eighty six persons due to lack of availability of time (Ministry of Urban Development, 2006b). Selection criteria of these representatives were not stated and individual representations were not considered. The report was also silent on methodology adopted for analyzing these suggestions or the manner of consideration.

This created two parallel processes of participation; one through the statutory process under the Delhi Development Act and another in response to the pressure groups of various trader associations and non-governmental organizations In the meanwhile, sealings and demolitions continued. This also set in motion a process where so called representative participation through NGOs and trader groups to an extra constitutional committee resulted in modification of law.

By now, traders and residents were both protesting; traders because of the closure of shops and residents through resident welfare associations for protecting their residential amenity which was being lost to the commercialization of residential areas.

Since process of hearing of objections/suggestions for the MPD 2021 was continuing and would take some time, the Ministry of Urban Development to hasten the process, decided to notify in March 2006 modifications to the 2001 master plan. This modification included the proposed chapter on mix use in the draft MPD 2021. The notification stated that it had considered all objections/suggestions in the matter (MoUD, 2006c).

Apparently this was not the case, because, on the basis of Tejinder Khanna Report, which had recommended something drastically different from the March notification based on representations from groups, the DDA issued two more public notices inviting objection/suggestions for modification of 2001 Plan for development control norms and mix use provisions in July 2006. The notice said that while master plan was modified on 28 March 2006 for mix use provisions, it has since then received several representations and to implement the Tejinder Khanna Committee report it was decided to issue this public notice for inviting objections/suggestions (DDA, 2006). This was despite the fact that the March notification of four months ago had considered all objections/suggestions.

This proposed modification was primarily the outcome of the 'Tejinder Khanna Committee' report, suggesting more permissibility in the residential premises. Localities, which were already stressed for infrastructure and were dense were given more flexibility for commercial activities. It was pointed out at that time that the option of regularization through plan modification was a result of the 'myths' being created about poor traders, fear of lawlessness etc. (Kumar, 2007). This report further paved the way for increased commercialization pointed out in response to an earlier public notice in 2002.

The public notice for proposed modification started with an acknowledgement for the "need for permitting use of land for purposes other than for which it is planned". In the DD Act there existed provisions for consideration on case by case basis for activities not permitted by the Plan. Instead of considering misuse as an aberration, the proposal sought to regularize majority of violations through this notification. More importantly it sought to make as part of the notification of mix use streets consultation with resident welfare associations mandatory. Public hearing for this notice was carried out at frantic pace and within two weeks after the time for filing objections, final notification was issued. Above sequence of fast paced events should be seen not as a simple policy modification but as a part of larger urban reforms agenda that demands 'flexible' land use laws. Participatory planning through 'stakeholder participation' becomes an instrumentality to allow for this 'flexibility'.

Setting up of expert committee at the level of the Central ministry to hear selected representative groups and consequent modifications to the plan (not necessarily based on the survey data) set aside the statutory process in which citizens had participated. A process was set in motion where citizen was replaced with stakeholder and stakeholders were primarily representatives of groups or associations who could lobby at the central level to an extent of getting the laws amended.ⁱⁱⁱ

3.2. Up-scaling Participatory Planning - second round of Local Area Plans

Neither the Delhi Development Act nor Delhi Municipal Corporation Act provide for preparation of Local Area Plans as yet despite the push for the idea in 2003. In 2007,

however, the Delhi Master Plan 2021 introduced preparation of local area plans for a subzone/ward by the local bodies within three years. It also proposed constitution of local level participatory planning group to frame guidelines for participation at the local level and legal framework review group for framing of local planning regulations.

The legal context of the local area plans continues to be ambiguous and so is its scope, interpretation and manner of participation. In January 2009, Municipal Corporation of Delhi was pushed to invite Expression of Interest from consultants for preparation of Local Area Plans through participatory approach. In April 2010, it was decided to re-pilot thirty three wards^{iv} for preparation of local area plans through public sector institutions. The scope of work prepared by the corporation included stages of base map preparation, mapping of master plan and zonal plan data, draft local area plan and final local area plan. A monitoring committee was set up and the scope identified participation through the ward councilor at each stage of the preparation. The work was to be completed within nine months. The work is at present in the final stages of finalisation with very little participation. In a survey conducted of the ward councilors of the thirty wards in September 2010, four months after the award of the pilot projects, majority of them were unaware of the project for their ward (SPA, 2010).

At the beginning of 2012, MCD issued an advertisement inviting comments on the proposals uploaded on the website related to the local area plan. Less than fifty responses were received. There were, of course, various reasons for lack of response. It also seemed that no one really had much clarity about the central idea of the local area plan preparation i.e. participatory planning. Some of the consultants did make a presentation to the ward councilors after so called third stage of the project. So far participation has been very limited. Moreover, the nature of proposals placed in the public domain for some of the wards seem seem arbitrary in proposing removal or retention of an activity and people. (MCD, 2012). The story of local area plans at the moment is moving at a slow pace due to trifurcation of the municipal corporation and lack of clarity about the process, however, it did introduce as part of the statutory planning process, an idea which as of now is an extra statutory participatory mechanism. These participatory mechanisms and their substitution of other technical processes unfold rather interestingly in the next stage

4. Disconcerting tendencies of 'participatory planning' processes - Master Plan Review

The MPD 2021 provided for plan monitoring and review. With monitoring targets and phases of review identified, the document also proposed ten management action groups on different aspects for the purpose of participatory planning. The review was to be based on monitoring data and processed through management action groups. In October 2011, public notice inviting suggestions for the master plan review were invited within forty five days (Fig.1).

In November 2012, most of the newspapers reported, the central minister's declaration that sixty percent of the plan was irrelevant and asked for major changes. This plan was notified by his ministry five years ago. One could argue this as a positive step of keeping pace with the changes but the only problem was there was very little data, on the changes or the monitoring of the plan, available. Population figures for Delhi by Census 2011 were less than the projected population for 2011 in the MPD 2021. There was significant reduction in migrant population, which would perhaps reduce the requirement of land to some extent. But the media continued to report the need for increase in floor

area ratio and densities to meet the housing requirements particularly the poor. No studies of land requirements were available.

In 2012, the DDA announced through advertisement four open house sessions in different parts of the city, where people could come and submit their suggestions. Public was invited to participate without any monitoring data. Most of the suggestions that came in were from property owners and majority of them suggested increase in floor area ration, inclusion of their street in notified mix use street or regularization of their areas. There were very few street vendors or slum residents or villagers.



Fig. 1 Invitation for suggestions for Master Plan Review

The management action groups constituted in 2008 for the purpose of preparing action plans based on monitoring data for different planning indicators never held any meetings. These were reconstituted in 2011 with a transformed purpose. All the suggestions received were now being sent to management action groups. In a truly participatory style, the objections/suggestions were uploaded on the website along with the minutes of the management action groups.

From May 2013, the public notices for modification to the plan are being issued at a rapid pace. The minister has set a target of hundred modifications to be notified by August 2013. The only problem is that the connection between the proposed modifications and suggestions made by the public could not be seen either in the minutes of the management action groups or in the proposed modification. The basis of these modifications are not the suggestions but most of the times representations made to the minister by groups and associations like PHD Chamber of Commerce, real estate developers association, Federation of Indian Chamber of Commerce and Industry. They pushed for more commercialization, lesser housing for economically weaker section, unrestricted mixing of residential in industrial areas, higher floor area ratio etc. Since majority of the proposals are pre-decided, the process of participation remains more of a formality.

5. Conclusions

Idea of stakeholder participation promoted by international agencies is mostly projected as a apolitical process and is documented as such in the city development plans or initial local

area plans. The agenda setting of these workshops is directed towards service delivery and management issues rather than rights or entitlements issues.

From the example of Delhi, it appears that there is very little understanding of participatory planning process and instead of empowering less advantaged groups, planning decisions are steered towards more powerful interests and the role of participatory planning in redistribution of power and resources is not visible.

Participatory planning practices in its current form in Delhi do not fulfill the very basic requirements for participation; availability of relevant information and procedure for consideration of view/suggestions as well as equal opportunity. Moreover, in the absence of explicit criteria for priority setting, stakeholder consultation mode of participation becomes more prone to favor agendas of powerful interests demanding liberal regulations as well as regularization of existing violations through plan modifications while maintaining the façade of participation.

Personal Note

I was part of a group called Master Plan Implementation Support Group that engaged with the Master Plan process from 2002 to 2007. It was started by Gita Dewan Verma, planner who also advised residents of old settlements, slums, group housing residents, street vendors and others. Many of us in the group responded to various public notices for plan modification and have personal experience of participating in many of the hearings as part of the statutory participation process. Many of the details and nuances not captured in this paper can be accessed at the <http://plan.architexturez.org/site/mpisg>.

Endnotes

ⁱ For a detailed critique of the proposal see Verma, Gita.D.(2005) , The Delhi Municipal Corporation (Amendment) Bill, 2005, <http://plan.architexturez.org/site/mpisg/p/051116>.

ⁱⁱ UN-Habitat prepared a 'Toolkit of Participatory Urban Decision Making' as one of the 'flagship products' of Global Campaign on Urban Governance. City Development Strategies (CDS) in several cities in different parts of the world were to improve the capacity of municipal authorities to implement participatory management mechanisms and upscale 'city consultation mechanism'. CDS approach was stated to be based on three important principles of 'enablement, participation and capacity building'. The Good Governance Campaign was launched in India in 2002.

ⁱⁱⁱ In order to avoid implementation of the court order, the parliament enacted "the Delhi Special Law" in 2006 under which no sealings or demolitions could be carried out for an year. Every year, this Act gets extended for another year.

^{iv} Delhi is divided into 272 municipal wards. Last year Municipal Corporation of Delhi was trifurcated into three corporations.

References

- Arnstein, S. (1969) "A ladder of citizen participation", AIP Journal, July, 216–214.
- Cohen, J. and Uphoff, N. (1980) "Participation's place in rural development: seeking clarity through specificity", World Development, 8: 213–235.
- Cooke, B. and Kothari, U.(eds.) (2001) Participation: the new tyranny, New York, Zed books.
- Delhi Development Authority (2006) "Public Notice", Hindustan times dated 24/07/06
- Department of Urban Development (2006) City Development Plans, Delhi, Government of Delhi.
- Grant Thornton (2011) Appraisal of Jawaharlal Nehru Urban Renewal Mission – Final Report, Volume I available at <http://jnurm.nic.in/wp-content/uploads/2012/06/Appraisal-of-JnNURM-Final-Report-Volume-I-.pdf>.

-
- Healey, P. (1997). Collaborative planning. Shaping places in fragmented societies. London, MacMillan.
- Kamath, L. and Vijayabhaskar, M. (2013) "Urban reforms and the middle classes: Fragmented collective action and the incomplete project of stakeholder participation" in *Participolis : consent and contention in neoliberal urban India*, Coelho, K, Kamath, L and Vijaybaskar, M. (eds.), New Delhi, Routledge.
- Kaza, N. (2006). "Tyranny of the median and costly consent: A reflection on the justification for participatory urban planning processes". *Planning Theory*, 5 (3), 255-270.
- Kumar, A. (2007) "Nine myths and fallacious arguments: A case of sealing illegal commercial establishments In Delhi", *ITPI Journal*, Volume 4, Number 2.
- MCD (2012) [http://www.mcdonline.gov.in/townplan/departmentdocs/subdocs/GHAROLI Draft proposals.pdf](http://www.mcdonline.gov.in/townplan/departmentdocs/subdocs/GHAROLI%20Draft%20proposals.pdf) accessed on 14th July 2013 (proposed plan drawing)
- Ministry of Urban Development (2006a), "Public notice for committee on unauthorised constructions", *Hindustan Times*, 19/02/06.
- Ministry of urban Development (2006b), Report of Tejinder Khanna committee to look into various aspects of unauthorized construction and misuse of premises, annexure II and III, <http://www.urbanindia.nic.in/moud> accessed on 12 April 2007.
- Ministry of Urban Development (2006c), Notification, Gazette of India Extraordinary Part II sec 3(ii), SO 425 E, Government of India.
- Shikha, S. and Matzi, S. (2009) Project Notes : Delhi local area plans, Note Number 41, Indo-US Financial Institutions Reforms and Expansion Project-Debt Market Component.
- Staff Reporter (2005) "Stop demolitions: demand worried MLAs", *The Hindu*, <http://www.hindu.com/2005/12/21/stories/2005122117480400.htm>
- Department of Physical Planning (2010) Approach to preparation of local area plans – A case of ward 144, unpublished studio report, Delhi, School of Planning and Architecture.

Geo-social networks and the understanding of the dynamics of the city: the case of Rio de Janeiro's boundaries of formal and informal neighborhoods

Yuri Q.A. TORRES, PROURB-FAU- Universidade Federal do Rio de Janeiro, Brazil
Lucia M.S.A. COSTA, PROURB-FAU- Universidade Federal do Rio de Janeiro, Brazil

1. Mapping as strategy

What use is a map?

This was the title of an exhibition at the British Museum in London, on the late 1980s. The idea was, through the display of different sort of maps, open up a discussion of the different roles played by maps across centuries. In fact, this question has been answered through different approaches and disciplines along time. Earlier in the 1970s, the French geographer Yves Lacoste argued that geography served, first and foremost, to wage war – stressing here one of the interests of the discipline, which is mapping the world and therefore bringing information that could be used to control people and territories. In other words, mapping is knowing.

It is already acknowledged that the act of knowing through mapping means the making of choices: spatial, temporal, physical and even emotional choices – among many others. The graphic recording of this information in a map brings new possibilities of reading and involvement with territories. As argued by Cosgrove (1999, p.1-2): “to map is in one way or another to take the measure of a world, and more than merely take it, to figure the measure so taken in such a way that it may be communicated between people, places or times”.

Here lies the main objective of this paper: having digital information and geo-social networking systems as the main tools of mapping, to explore a social cartography of the city of Rio de Janeiro concerning the relations between boundaries of formal and informal neighbourhoods. These digital network systems have a spatiality that is yet to be further explored. This paper is thus an attempt to contribute to academic studies that look at digital information as a strategy to mapping and understanding urban territories.

2. Geosocial networking systems and the complex contemporary city

The dynamics of a contemporary city are shaped by very diverse and complex factors. Recently ubiquitous experiences towards the city have dramatically changed our concepts and perceptions of its territory. As earlier advocated by Castells (1996) the vertiginous popularization of new ways of communication has collaborated to sharpen urban life through new dynamics and flows. Serra (2010) later addressed the strengthened role of citizens as innovative actors in this environment, affording immediate impact in public spaces. New medias are somehow reinforcing the value of place instead of eliminating it.

In more recent years, new spatial means have been developed on social networks, some of which seem less tied to traditional perception of the surrounding environment. Widespread geo-social networking systems have been playing an important role in shaping a parallel digital space based on the real interactions between citizens and the urban landscape. These networks have opened up new possibilities of exploring the city combining the preciseness of mobile location estimation services with personalized content, full of cognitive and perceptive clues. It has since been producing a new geography characterized by decentralization and horizontality, and people are yearning to some extent to move beyond Cartesian representation.

Connected citizens, touchscreen swiping their latest smartphone while out experiencing the city is a growing tendency on mature and emerging societies. Levels of connectivity and dataflow have starkly increased in the past decade, while both citizens and government are

bound to consider those platforms as a vessel for and a product of urbanity. Those networks also enrich the concept of social and collaborative creation, important for the local identity and community engagement. Recent mobilization through social networks, for example, transcends traditional hierarchies- as recently seen in Turkey and Brazil- and millions go to street demonstrations projecting social structure onto space.

Moreover, the physical dimension of cities has historically referred to people's access to resources, infrastructure and especially the interactions between them through the space. The new urban dynamics, driven by the connected citizens, is subsumed by timely encompassing narratives. Consequently, cities have since become increasingly hard to understand and map. This difficulty has been already noted by Cosgrove (1999, p.5): "Culturally, at every scale, connections between phenomena formerly considered distinct and relatively fixed, rooted in space (...) have been shown to be contingent and unstable (...). An implicit claim of mapping has conventionally been to represent spatial stability, at times to act as a tool to achieve it. In a world of radically unstable spaces and structures, it is unsurprising that the idea of mapping should require rethinking." From this perspective, cities digital counterparts can furnish it at some extension, adding a valuable contemporary case for urban analysis.

It is important to stress that the manner and degree to which is possible the interaction or isolation between citizens also shape the digital world and vice versa. Like digital segregation, spatial segregation is a persisting debate in most contemporary cities. Particularly in emerging economies, where a considerable percentage of urban population lives in precarious informal settlements, spatially segregated and socially excluded from the surrounding formal city, digital inclusion and digital visibility can become an important instrument to tackle inequality and improve quality of life.

Those informal urban spaces, once disconnected and set apart to the emerging digital sphere, do not operate in isolation. On the contrary, they complement and juxtapose with cities' formal circuits, forming a complex web of different morphological and typological patterns, added by cultural singularities, which cannot be disregarded whatsoever.

3. The case of Rio's formal and informal neighborhoods

Roughly 20% of Rio de Janeiro's population live in slum areas (IBGE, 2010), despite the country's considerable economic growth in the past decade and the fact that the city has been put into the spotlight again hosting mega-events such as 2007 Pan American Games, 2014 World Cup and 2016 Olympics.

Large redbrick favelas – as slums are often referred to in Brazil– sitting atop the city's steep and verdant hills, contrasting with adjoining best real estate and sharing together a thin strip between the tropical forest and the Atlantic Ocean, is a memorable portrayal of Rio's social exclusion's reflection in the landscape. Those informal communities that have sprung up unplanned, have been historically regarded as eyesores, unworthy form of urban developments, blighted by poverty, low access to services and widely renowned as lawlessness no-go zones plagued by shoot-outs between rival drug gangs (Neate and Platt, 2006; Leite 2008).

Favelas in the south zone are commonly very compacted settlements wedged between tony beachfront areas like Copacabana and Ipanema, and are historically the cheap workforce for the nearby formal city. The borderline between them has been always clearly defined by the topography. Once ending a road and beginning stairways, there starts a favela. Favelas in the north and west zones are commonly located in sparse hills, fringes of previous industrial sites and wetlands, more fragmented settled.

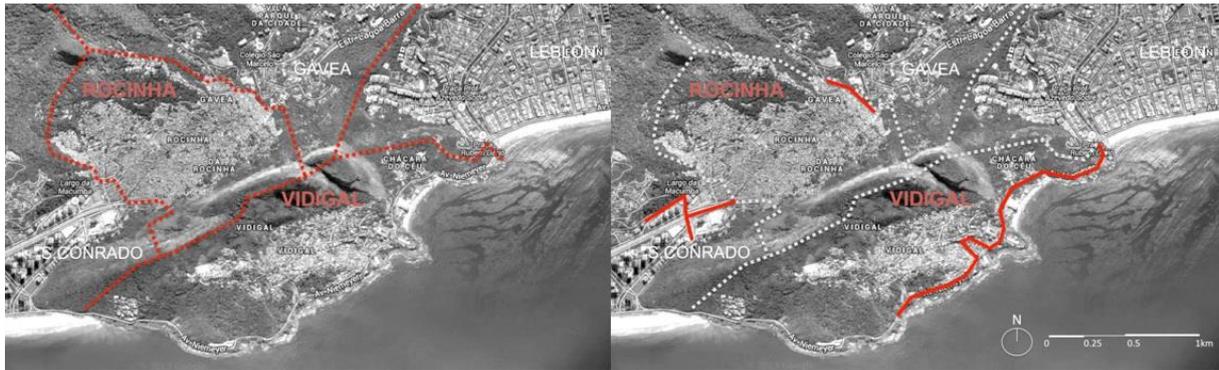


Figure 1: Geographical-relation between neighbourhoods' boundaries and topography in Rio's southern favelas (left) and borderline between formal and informal city (right).

More recently, Rio de Janeiro seems to be compelled to cope with the matter and considerably steps towards a better territorial integration have been perceived. Joined initiatives from municipal, state and federal spheres have unveiled massive investments to recover the historical absence of the state, tackling infrastructure shortage, halting violence and therefore paving the way for better socio-economic opportunities. New housing developments within the favelas for those living in risky areas, water supply, extensive sewage connections and local transportation are among the basic services under provision, addressing most of spatial deficiency. The efforts to strengthen police presence, to seize control and consolidate peace by large community-based police pacification programme, have also taken back territories where drug lords of heavily armed factions previously laid down (Henriques and Ramos, 2011). As an immediate result, these actions has sparked interest from the private sector and encouraged local entrepreneurs to settle down business. Services previously inexistent in those communities and mostly accessed in the nearby formal city started to pop up in the boundaries and within the favelas since then.

Whilst it has collaborated to better integrate once marginalized favelas with the wider city, the complexity of these highly fragmented territories entails much more than any response given. That is, the simplistic and dismissive way in which informal settlements have previously been perceived no longer match the current favela dynamics within the bounds, but still come up against the yet materialized mental borderlines that for decades overlooked inequality. Unlikely other cities where the boundaries of neighborhoods are not clearly defined by their morphological patterns or topoceptive dimension, Rio highlights a more on-the-ground and practical definition of limits and urban identities, a perfect patchwork quilt where formal and informal territories hardly overlapped.

Nevertheless, favela dwellers still commute everyday to the outside city in search of jobs, services, as well as recreation and leisure. Moreover, a certain territorial tolerance has long been a cultural symbol of Rio, meshed by both what is usually considered the formal and the informal parts of urban life. Despite some uncertainty and criticism concerning the rising cost of living among residents, there's a growing sense of belonging and activism issued from the latest developments and somehow the persistent stigma of exclusion and invisibility seems to have lessened. But greater and long-term efforts are needed to push favelas to articulate firstly with its adjoining neighborhood and later with the rest of the city.

Digital platforms and technology democratization are one of the considerable gateways to promote social, economic integration and approach both realities. Where once affordable Internet cafés met an important role in connecting the favelas residents to the world – computer possession and broadband connection were very scarce comparable to the neighboring wealthier districts – now affordable ubiquitous and mobile gears have allowed the rise of freelancer opportunities, access to information, education, and therefore an increase in the digital paths inside the communities. Following the development plans, the government has launched a policy to set up free wireless Internet networks in the most dense populated favelas as part of a broader plan for digital insertion to achieve computer literacy, foster cultural interchange and professionally qualify low incomers (Secretaria de

Ciência e Tecnologia - Rio Estado Digital; Ministério da Cultura- Pontos de Cultura). This may also bring up significant discussions on citizenship awareness and the right to the city through the visibility and legitimacy of these spaces.

4. Mapping the boundaries

For decades, general cartographies of Rio de Janeiro simply did not portray its nearly 1,000 favelas on the slopes of the rich south and the city's poor north and west zones (Peteranderl, 2013). Nevertheless they were easily identifiable on maps by either green or blank swaths with no streets, landmarks or other signs of settlements. Along with the previous cited movement towards the increase of visibility of these communities and their insertion in the planning practices, an intriguing question on how to represent their shapes and dynamics has arisen. Contradictorily, in a more polemic attempt to reduce the prominence of the negative connotation of the favelas, an important map server was formally asked by the city's tourism secretary to ditch the word 'favela' from its database, replacing it by the single name of the settlement, an example of the ambiguous official posture concerning the issue. In the meantime, where map data is scarce and official acknowledgment is pending, the engagement of these communities is a crucial step towards the real citizenship and a symbolic takeover of their historical stigma of abandonment.

Few mapping projects, initially tackled by grassroots organizations aiming to promote social progress within their communities and engaging volunteer youth from poor communities, have harnessed geo-social medias to create a collaborative platform relying on geocoded data of nearby points of interest (Viva Favela ; Wikimapa; Redes da Maré; Lucas, P., 2012). Since the mapping purpose was not simply to cull data and present it objectively, but rather represent the perspective of the cartographers, young correspondents could contribute not only outlining objectively the labyrinthine alleyways, stairs, dead-end roads and other passageway of their communities, but also including vast forms of multimedia such as videos and audio recordings, detailed information on local shops, foodies, bars and other local buzz. Enlarging the discussion, it is feasible that any connect residents could contribute to the making of a comprehensive collective map, even if unintentionally. Virtual performances ranging from messages, social media posts and other possible open generated data – especially geo-tagged ones– culled from the Internet may subsidize the information necessary to feed those maps. Local meaningful spots and identity always left on the wayside of digital platforms may enable a further step to their recognition as part of the wider city.

Traditional maps are blank canvas with nothing on them other than streets and sometimes the most remarkable buildings or touristic venues. The understanding of this new cartography with abundant amount of sensitive information is an emerging research field to address problems and solutions to the planning practices, especially in rapid growth contexts like metropolis in the developing world, where formal and informal settlements are a distinguishing feature and live side by side.

This study stands on the fields of social sciences and urbanism, aligned to traditional theories of citizens perceptions over the territory and their interactions (Jacobs 1992; Milgram 1977) and more recent investigations on the effects of mobile technologies over the physical boundaries of the city (Schwartz 2012; Rainie and Wellman 2012). This study aims to analyze the shaping of the digital urban territory through geo-social networking systems, ultimately Foursquare and Twitter, mining their open data and mapping what it may denotes the interconnected flows of public services and commercial activities, additionally with relevant open spaces.

This study foster what appears to be a potential tool and growing methodology of contemporary urban studies, especially in the field of urban planning. Targeting Rio's most representative slums that are recently emerging to formalization, it methodologically proposes tracking geo-coded information that suggests access to these activities within the boundaries of formal and informal city, anticipating discussion on the yet some degree of dependence of favelas out of their physical boundaries. In this case specifically, the analysis of geo-social networking activity in the boundaries of those neighborhoods delineates the extension of existing formal-informal overlapping services. Using the open digital data generated by citizens of both sides may exemplify the relation of formality and informality in Rio de Janeiro. Case studies in four different zones, the bounds of Rocinha, Vidigal, Maré and Alemão are conducted as paradoxical examples of how digital paths can be taken into consideration while analyzing and re-conceptualizing the dynamics between neighborhoods within a near distance.

4.1 Outlining services

Geo-tagging a message, picture or tweet is based on the coordinates of the user's location by the time of the message, which is typically provided via GPS, wireless or cellular triangulation. It is reported that the majority of geo-social networkers are not location-based influencers, and those who are, aggregate, for instance, place names and personal pictures or tagged messages including other users. The amount of data produced a day counts on quintillion of bytes (IBM, 2012), and the expansive glut of news, shopping, games, music, forums and the like have gone hand-in-hand. Despite social medias playing such a prominent role in citizens' lives, recent studies estimate, for example, that on a typical day, roughly 2 to 3% of total tweets (as Twitter 140-character messages are called) contain any location name or location positioning added (Kalev et al), which is still irrelevant to conduct extensive studies that cannot count on statistical biases. Despite this, about 15 % of geo-tagged tweets contain URLs links to multimedia content, including here Foursquare, Instagram, and Facebook accounts, a wealth of data being generated that may open up future possibilities of researches on social sciences and behavioral studies.

The popular micro-blog Twitter offers releases a publicly available, spatially embedded network dataset that can be fruitful for any territorial analysis (Butts and Acton, 2010). Accessing the totality its tweets requires access to a special service - Twitter's Firehose : the unfiltered deluge of 1 billion tweets produced in the lapse of a couple of days - that has limited access to non-cooperators and can be restrictive in terms of cost for academic researches.

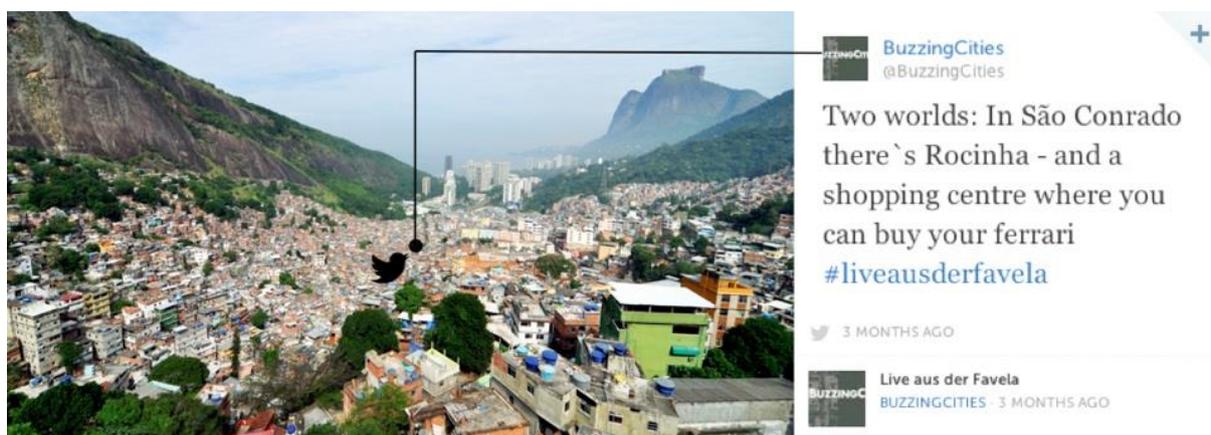


Figure 2: An example of geo-tagged tweet referring to some qualitative information about Rocinha.

The location-based social network Foursquare works like a social recommendation engine, giving its users a chance to timely check-in to places, share their location, search and add place recommendations, contact another nearby user. It is also very business-oriented and the tools are developed to improve personalized content to its users. A recently path towards a more public interface was the deployment of interactive map showing the 500 million check-ins made by its users in the past three months, making it possible to visualize human activity in big cities with considerable accuracy, so that it could become a useful tool to analyze citizens' behaviors and mobility. Foursquare check-in data contains context, has some structure and is short and many Foursquare and Twitter accounts are linked, providing public access to check-ins and posted information even if the account is private.

This study geographically filters this data, relying on the already released information from both servers. In the following pieces, this information is arranged in nodes connected by narrative threads, based on few themes captured from the geo-tagged information. These pathways create networks of meaning, blanketing the terrain and connecting individual action to a broader and collective context. Predictably, favelas show very sparse Foursquare and Twitter activity to subsidize an accurate analysis, whilst most of tagged information is observed in business districts and middle-class neighborhoods. Highly dense tagged areas depict locations where most probably have more access to Internet, that being infrastructural or income related, or most popular places within a city. Middle and upper classes neighborhoods are normally known as a hotbed of social networking activity. In Rio this is even more emphasized due to high concentration of shopping, leisure and cultural activities within those formal grid. Foursquare maps zoomed in the cited favelas show a scattering of small local business such as groceries, bars, gyms and foodies, rather than public spaces and recreational spots frequently identified in other neighborhoods. These activities are based located close to the communities' main accesses and along the few broader traffic routes connecting lower and upper regions (Figure 3).

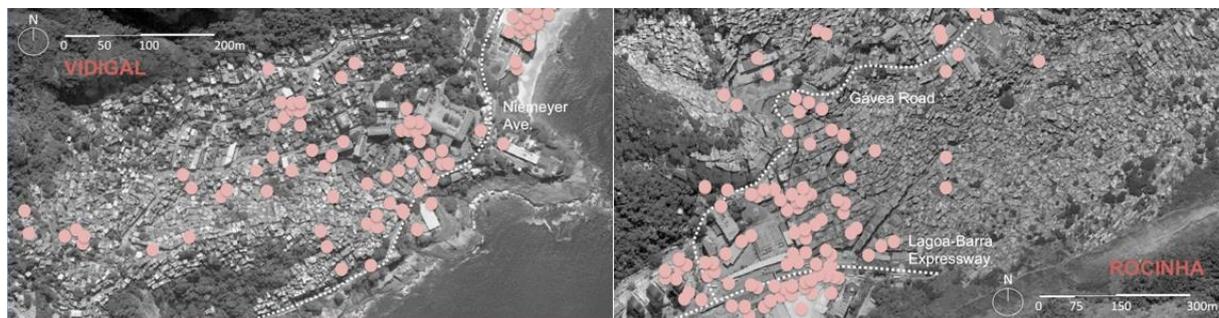


Figure 3: Foursquare check-ins within 500m distance from the community main access: Vidigal (left) and Rocinha (right).

Nevertheless, services target to the tourism sector are some evidence of the new values and uses added to the informal hilly communities in the south zone after pacification. Vidigal and Rocinha crawl up the once hilly forest above within a short distance to city's wealthiest and touristic beachside districts and have postcard views over the city. The increasing number of youth hostels and guesthouses venturing up the steep roads, for instance, related to its geographic proximity to the main touristic venues and landmarks evidences the tourism-related vocation of pacified communities (Figure 4). Some ocean-view properties perched on top of Vidigal are also turning into trendy foodies and terrace restaurants, as described by pictures and comments.

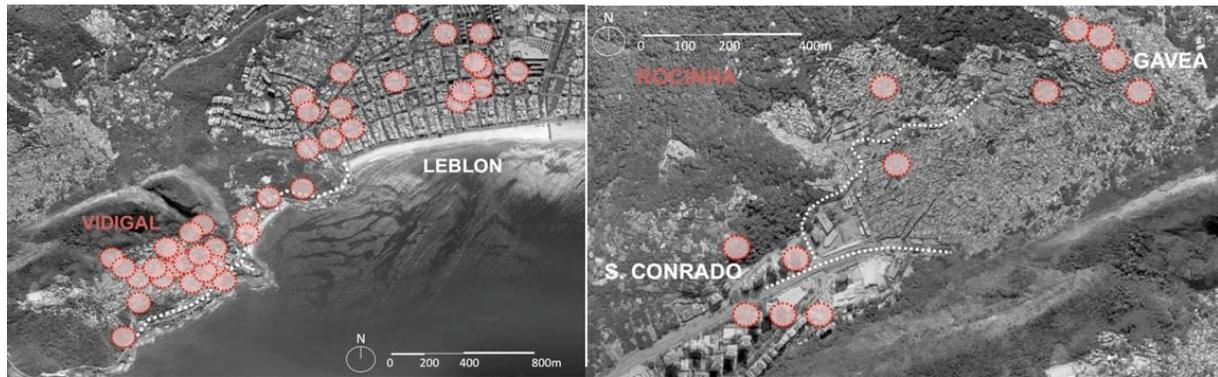


Figure 4: Foursquare check-ins in youth hostels and guesthouses in the neighborhoods of Vidigal/Leblon (left) and Rocinha/S. Conrado (right).

Very far from the tourist-friendly south zone, Complexo da Maré's 16 favelas- which some 130,000 people call home- stretch between two of Rio's main highways (Avenida Brasil and Linha Vermelha- highlighted in red line in Figure 5). Far from being just a dormitory district that serves as cheap labor force to the city, the strip formed by local business and services along Avenida Brasil, Rio's longest transportation hub, configures a lively alley also in the digital world, with considerable concentration of check-ins and tweets (Figure 5-left). Throughout its extension, Avenida Brasil was one of the first public spaces to be wireless-connected (Secretaria de Ciência e Tecnologia- Rio Estado Digital), empowering the construction of a digital datascape in the borders of at least 28 neighborhoods, home of over 1 million people.

Local businesses existing within Maré are more homogeneously spread throughout the zone and more commonly found in the core of the communities. Check-ins in immediate services such as eateries, foodies and cafés, for instance, are well distributed. On the other hand, the nearest formal district, Bonsucesso, historically served the communities with public services. Taking the example of educational services, check-ins in nurseries, schools and technical courses are observed in transversal movements outwards, crossing the borderline to the district (Figure 5-right).

Additionally, health services, such as clinics and hospitals are seemly in the same situation. Local businesses existing within Maré are more homogeneously spread throughout the zone and more commonly found in the core of the communities. Check-ins in immediate services such as eateries, foodies and cafés, for instance, are well distributed. On the other hand, the nearest formal district, Bonsucesso, historically served the communities with public services. Taking the example of educational services, check-ins in nurseries, schools and technical courses are observed in transversal movements outwards, crossing the borderline to the district (Figure 5-right). Additionally, health services, such as clinics and hospitals are seemly in the same situation.

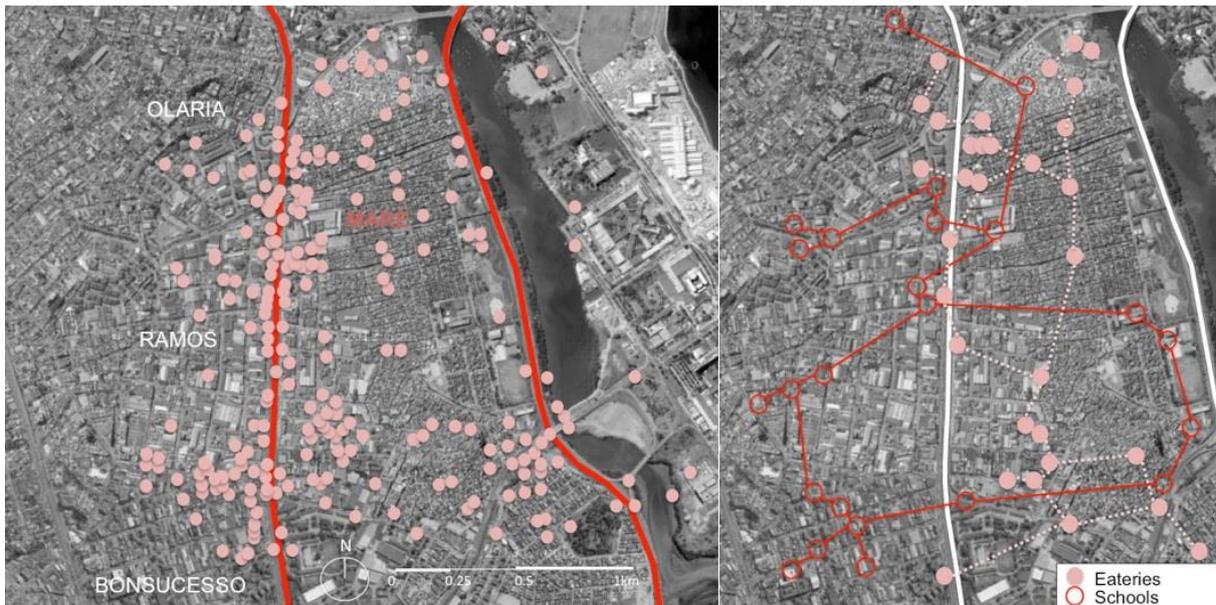


Figure 5: Foursquare check-ins (light red circle) around in a radius of 500m of Maré's main borderlines (red line) Avenida Brasil and Linha Vermelha (left image). Network of geo-tagged information on local eateries and foodies (light red circle) and schools (red circle) in Maré and nearby Bonsucesso (right image).

4.2 Outlining public spaces

An overall view of geo-coded messages suggests a discrepant concentration of leisure and recreational activities in the formal rather than in the informal neighborhoods. Despite the increasing investments to promote open public spaces within the limits of the favelas, due to its urban plot, very few non-built areas are possible. When existing, such as the case of soccer playing fields, they still do not count on a digital counterpart. In the south zone the beaches have always played the most important role in promoting outdoor sports and leisure, even for the nearby favela dwellers.

Repeated Foursquare check-ins and social circles influence over opting for a place rather than others. This may influence the choice regarding commercial and leisure-related activities. As for the tourism sector it may be useful orienting visitors and relating nearby landmarks. An interesting feature observed while mapping out the districts of Vidigal and nearby Leblon and Ipanema, was the sequence of outdoors activities and observation spots climbing up the hill and drawing a clear line of touristic and leisure continuity (Figure 6).



Figure 6: Foursquare check-ins around Rocinha and Vidigal in places related to outdoor sports (left) and indoor sports/fitness centers (right), suggesting the lack of open public spaces within the favela limits.

The Complexo do Alemão is one of the most deprived and underdeveloped corners of northern Rio de Janeiro and home of around 70,000 people. Made by the haphazard conurbation of 15 different favelas over several decades, urbanization developments have physically integrated the complex with nearby districts: housing programme in strategic vacant lots, new paved routes and Brazil's first mass transit aerial lift passenger system, consisting in cable cars stopping at the top of hills allied with educational and social-related buildings around the stations. It has since been noticed a notable tourism growth inside the community, verified by the concentration of check-ins and tweets suggesting the new vocation for scenic view. Sequential check-ins from the same users are observed, denoting a clear displacement from the first point- the train station, within the district of Bonsucesso towards inner points of the favela (Figure 7).



Figure 7: Sequential theme-related Foursquare check-ins in the aerial tram system of Complexo do Alemão (red circles), with comments and pictures shared in Instagram.

The nearby districts of Bonsucesso and Inhaúma have historically provided public and private services for Alemão's dwellers. The traditional borderline between the districts and the favelas used to be the railway line in the eastern limits of the complex and the main roads sketching its valleys. The recent digital footprints observed in both Twitter and Foursquare suggest a rearrange of services and other activities towards previous impenetrable and economically neglected regions inside the community, notably small regulated and brisk business. As suggested in Figure 8, new centralities around the cable stations promoted by programmatic combinations, establish continuum spaces that take part of the topography and shrink territorial segregation. Along with the delivery of basic social services, these centralities enabled, most of all, the knowledge of the landscape, improving orientations, adaptations and definition of spaces where the previous immense maze-like configuration reigned. The idea of improvement of public spaces as promotion of social and economic changes is therefore reinforced.



Figure 8: Observed check-ins (light red) within and out of 200m-radius distance from the new cable stations (red circles).

The analyzed maps reinforce the extent to which boundaries of formal and informal are still remarkable in the digital world. The findings suggest that the tendency of more cross-social tolerance in some cases, mostly among more consolidated boundaries, stage of some advances in social and security issues. Beyond the placement of text and photos by individuals in the diverse universe of social networks, it should be further discussed the potentiality of crowdsourcing map as a tool of urban analysis and a future referential platform to integrated discussions on the policies and planning practices.

The increasing API integration with other applications and web services may enhance this theory, allowing users to indirectly cooperate. However, there is an increasing concern on the vulnerabilities and privacy risks that can be exploited to violate users' location privacy in geo-social networks. Such vulnerabilities and privacy risks are actually caused by both system's design flaws and users' incautious activities.

5. Concluding remarks

Favelas shelter over one billion people in impoverished contexts all over the world. Territorial solutions are far from being resolved, while local strategies of urban intervention or public policies are aiming at improving their living standards. It has been proved the positive effect of recent urbanization and pacification plans in Rio's main favelas and it may emerge as a gateway to future achievement of full citizenship.

The purpose of mapping the emerging activities observed after those plans is two-fold. Firstly, information democratization, that is to portray favelas from the perspective of citizens and visitors, free of the stigma that often appears in related stories by mainstream media. Synchronized with upcoming events, it is an accompanied opportunity to shed light on life in the Brazilian favelas for the rest of the world. Secondly, pointed evidences of the creative and economic potentials that exist touching the boundaries of formal and informal city. The legitimacy of these potentials has not been properly recognized yet. Many are skeptical, however, arguing that innovative practices of governance go beyond the expected roles of digital platforms in the fields of planning and managing cities' land use regulation.

Regardless, to develop a holistic understanding of the ways in which our digital relationships to territory govern everyday life in urban morphology is a burning issue. Despite the access to the Internet and especially portable connectivity has skyrocketed, few local content is produced by slum residents in comparison with their neighboring districts. To encourage connected residents to take part more fully in the construction of digital space and to instill a technological interest of those still not connected are challenges existing grassroots organizations might bear at first.

This study needs a more profound and comprehensive analysis, which right now highlights the most important and relevant findings counting on the available data. Concluding, it is still anticipated to suggest, counting on mapping biased geo-coded information, a radical change in the urban land use emerging from the dynamics of citizen's digital lives. Meanwhile, as argued by Corner (1999, p. 213), "the function of mapping is less to mirror reality than to engender the re-shaping of the worlds in which people lives".

Acknowledgments:

The author wish to thanks CNPq, FAPERJ, PROURB- Universidade Federal do Rio de Janeiro and Faculdade Redentor for the support of this research.

References:

- Castells, M. (1996). *The information age: Economy, society and culture: Vol. 1. The rise of the network society*. Oxford, England: Blackwell Publishers.
- Corner, J. (1999) *The agency of mapping: speculation, critique and invention*. In Cosgrove, D. (ed) *Mappings*. Reaktion Books: London, p. 213-252.
- Cosgrove, D. (1999) *Introduction: Mapping Meanings*. In Cosgrove, D. (ed) *Mappings*. Reaktion Books: London, p. 1-23.
- Henriques, R. and Ramos, S. (2011). *Rio: A Hora da Virada*, pp. 242-254. André Urani and Fabio Giambiagi (eds). Elsevier: Rio de Janeiro
- Jacobs, J. (1992). *The death and life of great American cities*. New York: Random House.
- Kalev H. Leetaru, Shaowen Wang, Guofeng Cao, Anand Padmanabhan, and Eric Shook (2013). *Mapping the global Twitter heartbeat: The geography of Twitter*. *First Monday*, Volume 18, Number 5 - 6 May 2013.
- Leetaru, Kalev H.; Wang, Shaowen; Cao, Guofeng; Padmanabham, Anand; Shook, Eric. "Mapping the Global Twitter Heartbeat: The Geography of Twitter." *First Monday*, May 2013, Vol. 18, No. 5-6.
- Leite, Marcia P. (2008). *Para além da metáfora da guerra: violência, cidadania, religião e*

Geo-social networks and the understanding of the dynamics of the city

ação coletiva no Rio de Janeiro. São Paulo: Attar Editorial/CNPq- Pronex Movimentos Religiosos no Mundo Contemporâneo

Lucas, P. (2012). *Viva Favela* (ebook) Ten Years of Photojournalism, Human Rights and Visual Inclusion in Brazil

Milgram, S. (1977). *The Individual in a Social World: Essays and Experiments*. London: Longman Education.

Neate, P. and Platt, D. (2006). *Culture is Our Weapon: Making Music and Changing Lives in Rio de Janeiro*. Penguin Books: London.

Peteranderl, Sonja: "Live from the favela", DANDC Online, 16 January 2013, <http://www.dandc.eu/en/article/internet-opens-windows-life-brazilian-favelas>. Retrieved in 20 May 2013.

Rainie, L., and Wellman, B. (2012). *Networked: The New Social Operating System*. The MIT Press.

Serra, A. (2010) *Citilabs: ¿Qué pueden ser los laboratorios ciudadanos?* In Revista La Factoría, January-February 2010, nº45-46. Consulted 1/6/2013 Available in: <http://www.revistalafactoria.eu/articulo.php?id=523>

Schwartz, R. (2012). *The networked familiar stranger: An aspect of virtual and local urban anonymity*. In Cumiskey, K., and Hjorth, L., eds., *Seamlessly Mobile? Mobile Media Practices, Presence & Politics*. Routledge.

Organization websites:

IBGE The Brazilian Institute of Geography and Statistics: www.ibge.gov.br/english/

IBM Research: <http://www.research.ibm.com/news.shtml>

Pontos de Cultura: <http://www2.cultura.gov.br/culturaviva/>

Redes da Maré: <http://redesdamare.org.br/>

Rio Estado Digital: www.proderj.rj.gov.br/inclusao_digital.asp

Viva Favela: www.vivafavela.com.br

Wikimapa: <http://wikimapa.org.br/rede-jovem>

Urban Governmentalization and Public Participation in Sao Paulo

Nilton Ricoy TORRES
University of Sao Paulo, Brazil
School of Architecture and Planning
nrtorres@usp.br

Abstract

This study evaluates the thesis that planning is a government strategy aimed at 'governing' urban populations. To discuss this statement the paper takes as a reference point the post-structuralist discussion of power, the state and government in contemporary societies. By taking planning as a practice of government the text assesses the Brazilian experience of planning over the last ten years, and shows how planning as a practice of urban regulation has become a legitimation strategy of government.

Introduction

Post-structuralist propositions on power sustain that power is not something concrete or objectified from which one can take possession or maintain ownership, but instead it is a social relation that is established between individuals, and takes the form of webs or networks that exist in the social environment (Foucault, 2008, Laclau and Mouffe 1985, Lemke 2007, Veiga-Neto 2005, Rose 1992). These networks of relationships involve varied combinations and multiple connections between the agents targeting the government of people's consciousness and the conduct of individuals. In these networks the individual is not only an object of the power relations, but he is also subject to these relationships. In the context of democracy, individual autonomy is not opposed to political power, but rather it is the foundation for its exercise, to the extent that individuals are not only objects of power, but they also constitute themselves as subjects of power relations.

The focus is directed to political power, that power generally related to the sphere of the state and which, in a Marxist analysis, means the endorsement and guaranteeing of the reproduction of the social relations of production. Here political power is understood as a system of forces which is concentrated and monopolized by the state and whose function is to exercise power and influence on other spheres of society. Based on the ideas of Foucault, Laclau and Mouffe, this study deals with state action as an object of analysis and examines it as a constitutive element of the government's *problematique*. This analysis is developed by evaluating those strategies of government that are carried out through the various institutions that make up the sphere of governance (public and private). This study takes as its specific objects of analysis those tactics and strategies of government designed to regulate social conduct and individual behavior.

The study investigates the strategies of government that are carried out through the practices of planning and urban management. Particular attention is given to how technologies of power work to control and regulate human actions within cities. It also discusses the mechanisms that make urban planning, a technology of power, while also examining how planning becomes a technology of resistance and social emancipation.

The text covers the strategies of urban government by building on the concept of governmentality developed by Foucault, and investigates the power relations that are established between the agents within the microcosm of urban planning policies. The concept of governmentality draws attention to the kind of rationality embedded in the actions aimed at

understanding and controlling the various aspects of people's lives. This rationality involves manipulating crucial dimensions of people's lives and they include issues such as health, housing, work, leisure, happiness and wealth. Governmentality is an idea designed to capture a form of power that becomes predominant in the modern world – called political power – that emerges from the historical process of institutionalization of power and its concentration in the dispersed state. This form of power is characterized first, by the proliferation of government devices, and second, by the consolidation of a system of knowledge about who, when and how to govern. This knowledge will provide, on the one hand, the expertise for defining the means for the exercise of the art of governing and, on the other, the appropriate techniques for revealing the nature and idiosyncrasies of those upon whom government will be exercised.

The above framework underpins the analysis of the following sections. The working hypothesis starts with Foucault's concept of government which denotes a “historically constituted matrix within which the tactics, strategies and maneuvers of governance agents are articulated in order to manipulate the beliefs and behaviors of people and drive them to certain directions” (Foucault, 1991: 87-104). These maneuvers intercept the perceptions, interests and understandings that people develop regarding the world they live in and affect their behavior and their ways of organizing the physical space. It is in the context of these relationships that the different forms of government emerge and become hegemonic. According to this view the historical process by which governing strategies are constituted is a necessary condition for the formation of different societies throughout history. According to this view, the state is not an autonomous institution, which is outside and disconnected from society, but a structure that is formed alongside and via the same processes that constitute the society itself. Therefore, the state cannot be a central institution which occupies a privileged position within society, with unique and deterministic capabilities for exercising structural functions of social and economic reproduction, because the state itself is a product of relations of reproduction. For Foucault the key issue of modern societies, in addition to the power and domination exercised by the state, is its governmentalization itself.

The contemporary changes in the ways of acting of the state that occurred through the neo-liberal turn of the late twentieth century are examples of the governmentalization of the state. The shrinking of the state and the consequent cooling of its active power in society, are not seen as degrading the sovereignty of the nation-state, but as the emergence of new forms of governance. This type of government produces a new matrix of relations that favors autonomy, free will and individual responsibility. This new form of governance transfers to the private sphere the risk of social reproduction and turns market rules into ubiquitous and immanent rules. In this formulation the government is a concept that goes beyond the idea of government as the management or administration of the state to include other forms of government, such as individual management, family orientation, the administration of the house, the orientation of the soul, etc. Within this approach government is defined as the conduct or management of others' conduct and seeks to synthesize both, i.e. government of the self and government of the other. This work is divided into two parts. The first discusses the concepts of state, government, and governmentality, and assesses the changes in the logic of government that led to the governmentalization of the modern state. In the second part, planning is considered as an instrument of the process of governmentalization. It discusses five propositions about planning as a practice of government by focusing on Brazilian experiences with planning after 1984.

The genealogy of governmentality

The concept of governmentality refers to a set of practices of government that "has the population as their object, the economy as their most important knowledge and the safety devices as their basic mechanisms" (Machado, 2008, p. xxiii). Governmentality is understood as a strategy of governance directed to create docile citizens and governable subjects and which

uses various techniques to control, normalize and shape the individual's behavior. The concept, governmentality, identifies, on the one hand, the relationship between the state's government (politics) and the government of the self (morality), and, on the other, the construction of the subject (genealogy of the subject) with the formation of the state (genealogy of the state).

The term governmentality as proposed by Foucault is constituted by three different but interconnected approaches. The first describes governmentality as a structured mechanism, consisting of institutions, strategies and tactics of action. In this approach, governmentality is defined as the set of devices, procedures and calculations directed to exert a rather specific and complex power, which has the population as its target, proposes political economy as knowledge and safety devices as an essential technical instrument. The second describes governmentality as a trend. In Foucault's own words, by 'governmentality' he understood "the trend, the line of force which in the West led to the supremacy of such power that we call 'government' over all others – sovereignty, discipline – and that led to the formation of a set of specific devices of government and the development of a series of knowledge" (Foucault, 2008a). The third approach describes governmentality as a process: "by 'governmentality', I believe that we should understand the process, or rather the result of the process by which the state of justice of the Middle Ages, was converted into the administrative state in the XV and XVI centuries, and which little by little became 'governmentalized'" (Foucault, 2008).

In short, the word governmentality highlights four aspects of the historical processes behind the constitution of power: (1) its embodiment in the form of an object, i.e. a structured mechanism consisting of institutions, strategies and tactics of action; (2) the hegemony of government as a modern kind of power; (3) the emergence of government apparatuses and of specialized knowledge; (4) the historical process by which the state has become governmentalized (Foucault 1992).

Foucault argues that governmentalization is a historical process by which "the law society and the State of Justice of the Middle Ages was transformed into discipline society under the command of the administrative state and then, to the society of police, controlled by the safety devices that constituted the state government" (Foucault 2008). This process is termed rationalizing the policies and practices of government and became the primary mechanism of change, or the engine behind modern history. Such political rationality is not derived from a larger reason, either transcendental or universal, but is the product of historical developments that, in the case of modernity, produced "this fundamental phenomenon in Western history: the governmentalization of the state" (Foucault, 1991).

The governmentalization of the state means the historical process of "rationalization of government practices in the exercise of political sovereignty" (Foucault, 2008a). From this formulation Foucault develops the concept of governmentality as a guide for constructing the genealogy of the modern state as a category of analysis and then demonstrates his working hypothesis. The concept of governmentality serves to illustrate the multiple relationships between the institutionalization of the state's apparatus and the historical forms of the subjectivity of the individual. The intent is to capture the various processes of mutual determination between the modern sovereign state and the individual in contemporary societies. In this conception, government policies undertaken through state agencies are understood as a contingent and singular political process – a historical event that needs to be explained since it is not a given fact. If the state does not exist as a concrete form of data, but as a historical and contingent constitution of policies that are implemented through government institutions, how does the state act as a coherent political force? Does a multiplicity of institutions and the articulation of disconnected processes combine to form the state?

The State and the Problematic of Government

In the poststructuralist view (Laclau and Moufe, 1985; Foucault, 2008; Lemke, 2007) the state does not have an essential need or functionality inherent within society, but it must be understood as: (1) a 'medium' through which the government problem is discursively codified; (2) a way to separate the political from non-political spheres; (3) an institutional support by which the technologies of government are carried out in mutual coordination. In this approach the problem of government is not limited to the issue of 'state power' but involves verification of how and to what extent the state is linked to the activities of government including: (a) the relationships established between the political authorities and other authorities, (b) those funds, forces, people, knowledge and legal instruments used; (c) the devices, techniques, tactics or political actions that are operationalized. In the context of governmentality the state is not seen as the central institution or the social superstructure, but as another product of a complex and changing system of the discourses, regulatory techniques and power that emerge from the process of government. For Foucault the government is the central issue because it determines a system of thinking – by which the authorities specify the problems – and a system of action – through which government is carried out.

In this conception, the government is not a technique to be used by public authorities or a strategy of state, but instead the state is seen as a tactic of government and a historical dynamic for stabilizing power relations in society. This shift in focus is what Foucault calls governmentalization. In this perspective both the governmentality and the tactics of government are internal and external to the state, and this makes it possible to generate a continuous redefinition of what concerns the state, as well as what is public or private. The state is understood – both in terms of its existence and its limits – as a general tactic of governmentality. For Foucault, what is important for our modernity, our present, is not the growth of the state in society, but the governmentalization of the state because, according to him, since the eighteenth century we live in the era of governmentality.

It is through the analytics of government that Foucault aims to contribute to a theory of the state, because he believes that the formation of the state in contemporary capitalist societies is a crucial event for society's governmentalization. This analysis emerges from the history of governmentality and produces three approaches of the state in the age of governmentalization. The first stresses the importance of knowledge and political discourses for the constitution of the state. In this line the state is defined as a transactional/temporary reality given that it emerges from a dynamic set of relationships that produces simultaneously the institutional structure and the knowledge of the state. In the second dimension Foucault deploys the concept of technology – which incorporates both political and symbolic devices – and specifies the political technologies and the technologies of self. The state in this dimension is seen as a mode of articulation in which certain technologies of government emerge, and create temporary institutional validities by interacting with each other in particular ways.

The third dimension illustrates the state as an instrument and as an effect of the political strategies that will define the boundary between public and private, and between the state and civil society. State action is an effect of the political strategies, because that action cannot be assigned to a single and coherent actor, but is the result of conflicting, contradictory and competitive governance practices that emerge from a number of specialized sources of public government. This explains the relational and temporary character of 'state plans'. To think of the state as part of a network of governance does not mean to consider it a secondary category of analysis, but on the contrary, the state is a strategic instrument for sustaining the differentiation between public and private spheres, for subsidizing the idea of nation and for supporting the creation of sovereign (or territorial) limits. The state is also the instrument that shall determine the conditions of access to public assets and resources. In addition to its status as an instrument, the state is seen as a strategic field – the locus – which is defined as the general

guidelines of social government and where decisions are taken, benefiting certain actors and excluding others. This is the so-called the strategic selectivity of the state

Governmentalization and Planning

The following text discusses four hypotheses extracted from the poststructuralist analytical context and, in particular, from Foucault's propositions on the governmentalization of modern societies. The goal is to analyze the historical relevance of some poststructuralist philosophical conceptions and their implications for urban and regional planning. Each hypothesis addresses a specific issue and opens up the debate on the ontological and epistemological implications of Foucault's approach to the nature of knowledge and the practice of what we call planning in today's world.

Hypothesis 1: In modern forms of government, the main device for social reproduction is the association between the 'political' authorities and the authorities of 'knowledge' (economic, legal, spiritual, medical, technical). This association is established in an attempt to regulate social life and govern the collective affairs based on conceptions of what is good, healthy, virtuous, efficient or profitable.

In the context of Foucault's reflections there is no direct reference to planning as a technology linked to government practices. However, it is possible to understand public policies and urban planning as manifestations of the governmentalization of the modern state, in so far as they seek to organize life, regulate the space and control the actions of the urban citizen. In general, these policies are involved in the search for greater efficiency in the use and deployment of resources (power) aiming to control human conduct. As in cost-benefit analysis, the goal is to "achieve maximum result from a minimum application of power" (Goldstein, 1994, p. 198). The object of public policies is 'the citizen's conduct' and their objectives are to preserve and promote life and their guidelines are based on the concept of 'bio-power'. In this sense, policies seeking to organize the urban space can be seen as planning of the individual's conduct in relation the use of land, in order to promote and preserve the citizen's life in the city.

For Foucault 'bio-power' means those projects directed at individuals in their spatial and temporal characteristics, aiming to promote that community life of which the individual is a part. Foucault observes that the invention of the concept of bio-power, in the mid-eighteenth century, was related to the invention of the concept of population, which since then came to mean a collectivity of individuals who are thought of as a unit that can be describable, measurable, knowable and therefore governable. Bio-power creates the object of public policy in the era of governmentality: population. The population is understood as a collective of individuals that must be preserved through government policies, or as Foucault called 'biopolitics'. Since then, the population is understood as a living body, a body-species that should be governed in order to promote life. It is up to the state – also an eighteenth-century invention – to assume the role of coordinating the policies that will promote the life of the population.

For Foucault the idea of promoting life means to consider two dimensions of biological life. Promoting life first involves caring in such a manner that each individual remains alive and productive; and, secondly, seeks to avoid the human species' extinction. These changes in relation to the concept of life, as well as the invention of population control technologies, serve as generators of the so-called bio political-turn of the seventeenth century, by which the aphorism "to let live – to make die" during the reign of the sovereign is replaced by the guideline "to make live – to let die" of modern times.

In summary, strategies to govern populations were formed from biopolitics, and the latter was based on bio power. As we know, that does not mean the disappearance of power as a

discipline, but involves an interweaving between disciplinary and bio power: a rearrangement of complementarity by which one acts to enhance the other.

Hypothesis 2: Governmentality is the product of political rationality. It defines what is governable and promotes the means to govern. Planning as a mode of governance can only be analyzed in terms of their political rationalities. These rationales are constituted by: (1) discursive fields within which the exercise of power is scientifically delimited; (2) moral justifications for particular ways of exercising power by diverse authorities; (3) notions about what are the means, objects and appropriate limits of the policy; and (4) ways to distribute the driving tasks among different sectors of society.

In the case of planning policies that are designed to guide and discipline urban growth it is not difficult to perceive the political rationality that emerges from the discourse of planning and citizen education campaigns. The state intervenes by means of plans (master) in order to regulate how the individual can use and occupy the urban space, which also involves where and when citizens can move around the city. Utilizing a discourse of competency, founded in technical and scientific knowledge, the state uses the city as an environment for the implementation and dissemination of technologies directed to control citizens' actions, for the purpose of minimizing inefficiencies and to reproduce life and capital.

Public campaigns are meant to act as cultural pedagogies as they use the discourse of mobilization as a technology of government. Public campaigns seek to inculcate appropriate behaviors, rational attitudes and appropriate ways of acting. The rationality manifested through public campaigns, consists of a set of statements that put into circulation certain regimes of truth supported by technical knowledge. What is always at stake in these campaigns is the government process and those power relations associated with this, both underpinned by the discourse of rationality.

Technologies of governance manifested through planning policies should articulate two main mechanisms in order to achieve their goals. First, they must rely on the discourse of persuasion and cultural pedagogies in order to teach and persuade the population concerning their goals. In these cases planning policies and public campaigns work side by side to create awareness and specific worldviews. Second, in order to consolidate strategies of governance, urban planning policies must be put into practice, that is they only hold if and when fully implemented materially, and this means allocating all bodies – normalized or not – in the same space and effectively lend them a purpose.

For Foucault there is no pure rationality that has a universal character and stands outside the world of practice. Rationality is only attained at the level of everyday practice and not at the level of utopias. In the case of government planning policies, rationality is always contingent, permeated by power and dependent on specific interests in each spatial and temporal context. Therefore, all the forms of rationality that orbit around public policy can be understood as a discursive strategy aimed at the governing of populations.

Since the goal of public policy is to perform the best (the most effective, economical and permanent) government of the people, it is necessary to promote the highest possible ranking of the elements that compose them. In such an ordering the logic of planning policies is based on the idea of the deployment of 'rational' planning, the provision of 'proper' uses of the urban space and in some cases the pursuit of the universal right of access to the city.

In the case of public housing policy, the governance logic (or rationality) aims to provide access to 'ownership' (house property) and the ordering occurs through operations whereby the population is compared and classified in terms of poverty, shelter (or lack of) and life conditions. Thus, institutions that seek to ensure access to housing aim toward the principle of inclusion, even if, during the process of comparison and classification, they have to promote exclusion, by choosing a certain criterion and excluding others. Thus, it can be stated that policies that create

spaces for inclusion are also the same ones that create spaces of exclusion. It follows, therefore, that equal access does not guarantee inclusion, in the same measure that it does not remove the shadow of exclusion.

In the case of urban planning policies the rationality underlying governance practices work by creating, ordering and selecting the realities by which they intend to intervene. The problems that are chosen to be the objects of political action are carefully defined, specified and 'technically' delimited, and the solutions that follow will obviously be the technical elimination of those problems. By strategically creating the object of the action and convincing people of the existence of a problem, the government also creates a sense of what is 'appropriate', 'desirable' and truthful. Thus, in seeking to meet the needs and desires created (by the manipulation techniques of bio power) policies end up reproducing or recreating the same problems that they seek to reduce since they are not able to universalize the realization of the promised truth. The logic that creates problems of government, also recreates them as new problems of government.

Hypothesis 3: Knowledge is the foundation of government and therefore the essence of planning practice. As government is the domain of cognition, calculation and experimentation, planning as part of the government involves the knowledge of urban life in order to be able to govern it.

Government is a problem-solving activity, in that it represents the obligations of governments in terms of the problems they seek to solve. The agenda of the government and consequently of the planning process is closely linked to the problems it intends to govern, that is, the 'errors' to be corrected and the 'deficiencies' to be eliminated. The analysis of government throughout history suggests a sequence of *problematizations*, in which experts (politicians, scientists, philosophers, military, etc.) assess what is real and what is ideal, and then seek to reduce or eliminate the distance between them. The concepts thus formulated define what we understand by, for example, poverty, urban problems, productivity, competitiveness, social crises, educational deficits etc. Through this process, needs are identified, proposals for action are drawn up and then linked to the instruments of government available.

As part of the process of government, plans are drawn up and within them strategies of action and techniques of intervention are organized to confront those specific situations defined as deficient or problematic. It is within the realm of plans, policies and proposals prepared by experts (philosophers, politicians, physiocrats, etc.) that it is decided what is desirable, viable or sustainable and what goals should be pursued and when, how and why. This is the domain of strategic plans, programmatic actions and dogmatic justifications. This is the locus of norms and controls; the place where the decisions are made, policies formulated and targets set and, ultimately, who benefits from them.

The transformation of political rationality into plans and government programs does not occur by a deterministic or mechanical process, but through a subtle objectification that translates moral values, knowledge and languages of political power into a technical language of action. This translation involves moving from one space to another, whereby definitions of government, political priorities and strategic concerns are transformed into intervention technologies.

In the context of governance practices, government programs are not only a statement of desires or intentions, but they are also assertions of power grounded in knowledge and competence. First, whoever is in power arrogates competence over society's issues (the economy, nature, health, poverty) and gives to the experts a mandate to deal with them. Second, the knowledge embedded in government programs is essential for legitimating the strategic exercise of power on such problems. Knowledge, in this case, is intertwined with power and thus in turn with the action effected. Third, the political management of an issue requires specific knowledge to represent and describe it in order to expose its truth and allow its reframing in terms of political calculations.

An essential practice for production and consolidation of expertise are the technologies of government that are linked to the activities of registration and calculation that are monopolized by the state. In Foucault's conception the state is not the central apparatus of government, and nor does it represent a class in power, but is an extensive institutional complex where several centralities are constituted and organized to make up the process of government. This complex consists of several scattered apparatuses of government, where multiple centers of government work at producing information and knowledge, raising and evaluating the data and facts of reality in order to maintain appropriate control over the various contexts of government.

The kind of government that emerges in the seventeenth century is closely linked to the notion of statistical data – called the science of the state – because it becomes clear that government as the conduct of conducts is only possible with the accumulation and organization of data related to the object to be governed. This practice progresses over time and since then broadens the range of information that is made available to government in order to guide the behavior of others. The goal is to control all aspects of everyday life, monitor the social accounts, and manage people's desires by using market researches, censuses, economic polls, school surveys, etc. Increasingly 'government' means to analyze, judge and decide based on information and records collected in the real world.

The representation of the object of government is a permanent technical activity that is carried out systematically by government institutions. The effective operation of government requires putting into action an extensive network of research and a meticulous documentation system with the aim of turning the events and phenomena of reality in systematic information: births, deaths, diseases, marriages and divorces, income levels, types of diet, employment, unemployment etc. These recording practices turn reality into something stable, comparable and combinable. The real world is then converted into an object to be examined and diagnosed or modeled. Evidently the information produced in this production line is not neutral, since the action of recording is, in itself, a way of interfering in the real world. In fact, the procedures for collecting and recording information, as well as techniques for evaluation, measurement and modeling, make the object of investigation (the real world) susceptible to different interpretations.

The recording of reality made through procedures of data collection, makes room for the establishment of centers of planning and applied research with the goal of providing profiles or elaborate scenarios of urban social processes it is intended to intervene in. Therefore information collected in a decentralized way must be transported and accumulated in specific locations (planning institutions, research agencies, centers of intelligence, logistics) in order to facilitate undertaking comprehensive diagnoses and effective policies. The concentration of data in specific places gives individuals or groups who run such sites exceptional powers, as these positions allow them to control the calculations and actions to be undertaken. With a privileged knowledge of the object to be ruled, such groups or individuals accumulate power and authority in order to claim legitimacy for their plans and policies. It is in this sense that the production and control of information plays a key role in power relations within society, in that it contributes to the empowerment of certain agents, and this enables them to exert power over those whose only role is to be the objects of such information.

The calculations also have the ability to transform the object of government to the extent that they enable, aggregate or disaggregate phenomena in time and space, revealing regularities, patterns or deviations that will support and enable interventions on a specific reality. The calculations, by themselves, are only mechanical manipulations designed to reveal trends and justify relationships between different phenomena, however, they make entities such as population, economic data or public opinion, thereby they become calculable and predictable variables.

Government is a process intrinsically linked to technical expertise, to the extent that the determination of government targets depends on cognition, calculation and experimentation which are the domains of expertise, par excellence. In planning, the role of expertise is not limited to developing a network of rules aimed at controlling urban life, but also to support the various efforts to consolidate a calculated administration of various aspects of citizens' conduct in cities. Expertise is the key element of policies that seek to drive the behavior of the citizen in urban areas, it is through it that government seeks to educate, persuade, induce and incite people's lives in cities.

Technical knowledge, as we know it today, comes about in the seventeenth century, with the transformation of rationalities and technologies of governance, seen as a solution to the impasse of the liberal conceptions about the role of government. The problem was to reconcile the liberal idea of politics as a field restricted to the public sphere, with the recognition of the political implications of the activities of private companies. It is the spread of technical expertise across the public and private spheres which will allow for the construction of a new rationality of government, one capable of connecting the issues of public and private life. This new rationality will make the private company an object vital for controlling the economic life of the nation, and the family an agent for the control of social life.

In this scenario the task of sewing together the overall objectives of macro political governance, with the detail of everyday governance (corporate or familial) is essentially performed by the expert. Here the expert becomes engaged in a dual role. On the one hand, he acts as a member of the government by seeking to translate the problems of the economy and society into technical language. On the other hand, he acts as an independent expert, and seeks to provide solutions to the everyday concerns of the ordinary citizen (investment, work, children, health, etc.).

Throughout this historical process, various social sciences are created (economics, sociology, psychology) and they gradually construct a repertoire of intellectual visions, versions and justifications that will provide the necessary technological instruments for government action. These new insights provide explanations that make the world something thinkable and intelligible and are expressed in the form of procedures for taming intractable realities, subjugating them to the logical analysis of rational thought. Thus, for example, the management of urban problems involves defining, a priori, all the elements, processes, and relationships targeted for government intervention. In the case of urban public policy, problems are reset through a technical language, and then transformed into laws, processes, and urban features, in order to provide the necessary elements for the city to be understood, designed and managed with a view to increasing efficiencies or reducing dysfunctions.

Government plans assume the world as a mechanical device, consisting of fixed rules, recurring processes and predictable behaviors, which can be programmed and controlled. Such plans turn citizens into objects of government, 'things' to be manipulated, susceptible to diagnoses and prescriptions by means of calculations and normalizing interventions.

In short, knowledge defines and shapes every aspect of social life and, by doing so, makes social life something liable to be governed, that is an object to be managed, planned and disciplined. The city – as we perceive it with its features, peculiarities and problems – can be understood as a product of rational knowledge, which makes it an object of intervention, i.e. a governable entity. The city, seen through the concepts of the social sciences (such as public policy and planning), is but a device that builds on the ideology of scientific rationality and which aims to create an image of the real world that allows us to think about and understand it so as to make the issues of everyday life in the cities something liable to be planned.

Hypothesis 4: The government of social life is expressed through technologies of governance. Such technologies reveal an intricate complex of plans, policies, programs, calculations,

documents and procedures. It is through these practices that the public authorities seek to carry out government aspirations. The technologies of urban governance are manifested in four types: (1) technologies aimed at disciplining the body of the individual; (2) the technologies that aim to regulate population processes; (3) technologies that seek to encourage self-control (technology of self); and (4) political technologies of individuals.

As explained earlier, the government is a process by which plans are formulated and government strategies designed. Both plans and strategies are formed by a web of programs, procedures and tactics by which different political forces seek to operationalize the actions of government so as to allow the establishment of connections between the aspirations of government and the activities of individuals and groups. This set of techniques, plans and procedures is termed 'government technologies'. It is through technologies (and the plans that operationalize them) that the government carries out its political rationality in order to achieve social control. The implementation of such rationality does not only mean the replacement of the real world by the ideal world. It also involves the assembly of a complex system of forces and values (legal, moral, architectural, administrative) that functions as official criteria, regulating and shaping the actions of individuals, groups and organizations.

By focusing on the techniques and strategies of government, the analytics of government examines how the government operates in everyday practice, in order to understand the transformations taking place in the state and public policy. In this methodological maneuver Foucault proposes the concept of technology to grasp the four different strategic modes designed to control society's conduct. The first is related to the techniques of observation and recording. The aim is to control the actions and behaviors of individuals, in order to discipline their body. The strategy is to create docile and responsible individuals able to live in dense communities, such as cities. The discipline as a technology of government begins to be used in the seventeenth century, with the intention of organizing the process of urbanization and to promote the concentration of populations. The target is to ensure the appropriate supply of a tamed population according to the needs of the nascent industrial revolution.

A second group of technologies is linked to those forms of regulation of the population, particularly those living in cities. Here the techniques aim, not only curb undesirable actions, but also to create knowledge of collective behaviors in order to predict and control future events. The systematic observation of urban phenomena is the key elements of the practice of town planning. They allow you to accumulate knowledge about social behaviors, migratory movements, and forms of use and settlement of individuals in urban territory. These skills are crucial for planners, since they allow diagnosing, predicting and even anticipating emerging social problems in urban areas. The purpose of policies for social discipline is to create healthy and functional urban environments which are able to meet the needs of industrial capital.

A third kind of technology refers to the technology of self. Such technologies address the processes by which individuals exert self-control and the ways they see themselves as ethical beings. These are forms of self-imposed control and are derived from broader processes of control and social discipline. The technology of self-control involves a process of curtailment of consciousness, focusing on parameters of normality and proper conduct that are inculcated through laws, public campaigns, education, etc. Here individual experiences that deviate from the standard behavior can become social problems (moral, political, legal, public health). In the case of urban areas, behaviors conceived as deviant from normal, worthy or appropriate, are considered social problems to be removed – as in the case of urban slums.

A fourth group of technologies, termed the political technologies of individuals, act on how we recognize ourselves as members of a social body, and strengthen our sense of belonging as members of a community, participants in a society, inhabitants of a city or citizens of a country. These technologies also act on the level of consciousness, constituting identities, perceptions and creating an intelligible world that will be seen as natural. These sensitivities will

produce an idea of 'we' that will be different from the 'other'. Such technologies are also essential for practices of urban government, because they require collective involvement in situations of social exceptionalism (epidemics, floods, disasters, etc.).

Conclusion

Foucault's theory of power does not start with oppression or domination schemes in order to identify mechanisms that affect and/or constrain freedom. Instead it is a research project that aims to provide analytic tools for understanding the origins and regimes of power and its relations with rationality and knowledge. His theory is designed primarily to produce knowledge that can provide assistance to promote change.

It is worth noting the normative attitude that, throughout the history of planning, has been dominant both in theory and in practice, has not contributed or has been of little help for social development and to advance planning. The ideals of modernity, democracy and social justice are, in general, distant and sometimes unreachable, and may be seized by a shift in the epistemological focus of the discipline. This means that rather than continuing to follow the path of normative rationality, it may be worthwhile to pursue a practical rationality in order to guide planning actions. If, on the one hand, the normative rationality offers noble ideals of struggle, on the other, it does not provide any indication of the routes to be followed in order to achieve those ideals. The analysis developed here explores the dilemma of idealistic planners who strive to formulate coherent plans and magnificent proposals: they know what they want to achieve and where to go, but do not know how to get there, because in most cases the normative ideals are oblivious to the world of the real city.

Idealistic-normative planning concentrates on questions such as 'what is the goal we want to achieve' and 'what is necessary to achieve it.' This study proposes a reversal of such and suggests that planning should concentrate on questions such as 'what are the strategies of the everyday' and 'how they are carried out in the real world'. By focusing on the real city and not the utopia of the ideal city, planners will understand the city as an object-subject with which planning will share actions that aim to change it and to turn it into something better

Foucault develops a kind of analysis that can be useful to construct an idea of planning as a social practice aimed at promoting social change through democratic means. In this formulation the conflict of interest is not something destructive or socially dangerous, but rather is seen as the foundation of freedom. In this sense the possibility of conflict is an opportunity to build a more just world.

Therefore, theories that ignore or marginalize the conflict are potentially oppressive. The idealism of the plans and planning policies seeking utopias, and disregard the conflicts of everyday life, are seen as authoritarian and sectarian, since they advocate the pursuit of a 'single' truth. Political and social life in the real world is made up of diverse views and conflicting interests, and it is these differences that should guide the practice of planning, and not the idealistic models based on fundamentalist ideologies and absolute truths.

The advanced democratic societies tend to value diversity and encourage autonomous groups to constitute their own ways of life, thus legitimizing the differences and conflicts of interest that emerge from them. In this sense, the political consensus is seen as oppressive. The consensus should never suppress or neutralize the interests, commitments, or beliefs of a particular group. In this view, consensus is only possible inside the group, where there is no exclusion.

Every democratic society must guarantee the permanence of the conflict. The role of planning as a democratic practice should be to support the understanding that power and conflict are always at the center of social processes, as suggested by Foucault. As part of this argument, this paper argues that the practice of planning committed to dialogue and open to

conflicts provides a more realistic and rational basis for planning than the idealistic paradigms based on utopias insensitive to the real world and built on oppressive consensuses.

By exploring the counter-face of planning, we found that beyond the oppressive aspect of planning as a rational-idealist activity there is also our failure as planners in making a difference through planning. This study proposed to investigate the practice of planning, in order to assess how it is done in the context of everyday practice. By directing attention to the intricacies of the hidden practice and not to what planning should do, we intended to shed some light on what planning really does in practice. The research also sought to provide an explanation of how power is structured and how it involves us. This helped to elucidate some mechanisms involved in the planning process as a steering device. This study is part of an effort directed at providing an understanding of planning in the context of general government practice. The intent was to contribute to specifying the paths to a more effective planning thereby suggesting how to make a difference.

References

- Appadurai, A. 2002. Deep Democracy: Urban Governmentality and the Horizon of Politics. *Public Culture* 14(1), pp. 21–47.
- Bourdieu, P. 2010. *Razões práticas: Sobre a teoria da ação*. São Paulo: Papirus.
- Mitchell, D. 1999. *Governmentality: Power and rule in modern society*, London: Thousand Oaks, New Delhi: Sage.
- Flyvbjerg, B. 2003. Rationality and power. In Scott Campbell and Susan S. Fainstein, eds., *Readings in Planning Theory*, 2nd ed. Oxford: Blackwell, pp. 318-329.
- Foucault, M. 2005. O sujeito e o poder. In Dreyfus, Hubert; Rabinow, Paul. *Michel Foucault. Uma trajetória filosófica: para além do estruturalismo e da hermenêutica*. Rio de Janeiro: Forense Universitária, 1995, pp.231-249.
- _____. 2006. *A Ética do cuidado de si como prática da liberdade*. In *Ditos e Escritos: Ética, Sexualidade, Política*. Vol. v. Rio de Janeiro: Forense Universitária.
- _____. 2008. *Microfísica do Poder*. São Paulo: Graal.
- _____. 2008a. *Segurança, Território, População*. Curso dado no College de France (1977-1978). São Paulo: Martins Fontes.
- _____. 2008b. *Nascimento da Biopolítica*. Curso dado no College de France(1978-1979). São Paulo: Martins Fontes.
- _____. 1991. Governmentality. In: Burcell, G.; Gordon, C.; Miller, P.(Org.). *The Foucault Effect: Studies in Governmentality*. Hemel Hempstead: Harvester Wheatsheaf.
- Goldstein, J. 1994. *Foucault and the Writing of History*. Oxford: Blackwell.
- Koopman, C. 2011. Foucault and Pragmatism: Introductory Notes on Metaphilosophical Methodology. *Foucault Studies*, 11, pp. 3-10.
- Laclau, E. and Mouffe, C. 1985. *Hegemony and Socialist Strategy: Towards a Radical Democratic Politics*. London: Verso.
- Lemke, T. 2007. An indigestible meal? Foucault, governmentality and state theory. *Distinktion: Scandinavian Journal of Sociological Theory*, 8 (2): 43-64.
- Machado, R. 2008. Por uma genealogia do poder. In Roberto Machado (Org.) *Microfísica do poder*. Rio de Janeiro: Graal, p. vii-xxiii.
- Pløger, J. 2008. Foucault's dispositif and the city. *Planning Theory*, 7(1), pp. 51–70.
- Rose, N.1992. Political power beyond the state. *British Journal of Sociology*, 42 (2), pp.172-205.
- Roy, A. 2009. Civic Governmentality: The Politics of Inclusion in Beirut and Mumbai. *Antipode* 41(1), pp. 159-179.
- Veiga-Neto, A. 2005. Governo ou governo. *Currículo sem Fronteiras*, 5(2): 79-85.

Creating Vibrant Streetscapes

Holly Williams, University of Oregon, Eugene, U.S.A.

Intro

Streets play a vital role in the health, happiness, and livability of a community. Creating vibrant streetscapes in Old Town Portland will revitalize the area and improve the quality of life for residents and visitors alike. As the city of Portland continues to gain recognition for outstanding planning aspects, it becomes essential to transcend traditional streetscapes and implement design that supports a thriving urban lifestyle. Improving existing streets in the Old Town area can be achieved by: widening sidewalks, implementing multimodal access, using permeable pavement, and creating bioswales. Results of these improvements would include: creation of sense of place, increased pedestrian traffic, improved urban sustainability, and an overall exemplary downtown district.

Body

Active sidewalks

The revitalization of this area depends heavily upon attracting pedestrian traffic. Creating space for pedestrians that is safe, inviting and functional is the ideal way to draw foot traffic to the district (Metro, 2002). By updating the design of sidewalks in Old Town, pedestrians will have a realm in which they can easily move about or simply sit and watch the world pass by.

Wide Sidewalks

Building a sidewalk that is wide enough to incorporate both transportation and open space is a critical part of not only an active sidewalk, but of a vibrant streetscape. A recommended width of 12 feet or more is suggested for sidewalks that include a variety of amenities. Within this 12 foot sidewalk there are multiple zones of activity including a storefront zone, a walkway zone, and a furnishing zone (Metro, 2002). The width of each zone may vary depending on the overall width of the sidewalk, but the walking zone should be the widest, with the furnishing zone and storefront zone approximately one and two feet narrower respectively (The Downtown Alliance Streetscape Steering Committee, 2006). The streets in Old Town that would most benefit from wider sidewalks are Pine Street, Ankeny Street, and 1st Street.

Social Spaces

Creating space within the sidewalk to make a street welcoming is an important part of a vibrant streetscape. Social spaces should create an atmosphere that draws people to the area and allows them to interact with others or simply sit back and relax (The Downtown Alliance Streetscape Steering Committee, 2006). In this study area, creating open space would be a catalyst to attract people into the neighborhood. While people might stroll through Old Town before shopping at Saturday market or after a trip to Voodoo Doughnuts, there is no social space to keep them in the area.

Physical Comfort and Safety

A successful streetscape not only needs to be beautiful and functional, it must also make pedestrians feel safe. Physical comforts such as parked cars and landscaped planters create a buffer from the street traffic and noise (City of Berkeley 2012). The sidewalks should remain well kept and in good repair in order to meet the needs of all aged people. The sidewalks should also be well lit. Pedestrian scaled lighting not only gives the feel of comfort and sense of place, but also provides important safety aspects (City of Berkeley 2012). In Old Town, cast iron street lights and gas lamps could provide light as well as historical context and sense of place. A safe sidewalk does not allow fast moving vehicles at the curb and may have extended sidewalk space near crosswalks to shorten crossing distance.

Ambiance

Streets are among the most important determinants of an area's character and can be essential in creating a sense of place. One of the best ways to add to and enhance the character of a street is with various types of street furniture. Street furniture can include a wide range of elements including street lights, public art, benches and tables, planters, trees and other foliage, trash cans, street vending, restrooms, and signage (Kost & Nohn, 2011). These furnishings make streets a place where people want to spend their time and where they can converse with others. Benches and tables should be placed where they are not obstructing transportation and where trees provide some protection from the elements. They should be placed close to public restrooms, in front of accessible entrances and exits, and outside the main circulation path. Trash cans should be placed at regular intervals to encourage proper disposal of waste. They may also be painted a contrasting color or decorated in an interesting fashion to draw attention to them and create a unique characteristic. (Kost & Nohn, 2011) In Old Town, the incorporation of cast iron street furniture could be used to tie the area to its historic roots and create a sense of place. This photograph of a cast iron bench is one example of iron work that is functional, exquisite and would work well in the district. Public art might also be used to create ambience and give the district a distinct feel. One recommendation for this area would be adding a few pieces of simple, yet bright art that come from a series and are placed through Old Town. For example, painted bikes, like the one pictured here, could be scattered throughout the district. The bikes could vary in color and each one might have a basket located in a different spot that is planted with flowers. For more on street art, please see the section Public Art.

Multimodal

Portland is known as one of America's great bike cities. With huge portions of the population who commute by bike, it is essential to assure their safety and provide them with abundant routes. Part of creating vibrant streets includes access for all forms of transportation. Creating cycle tracks in this area that allow two way bike traffic would greatly improve the flow of transportation for bikers. Having designated cycle tracks in this area would not only provide easy transportation for commuters, it would also attract those people who wish to bike in a more leisurely fashion. More information about the implementation of cycle tracks can be found in the section Active Living.

Bioswales

Bioswales are storm water runoff systems that provide an alternative to storm sewers. They can filter water runoff from rain and snowmelt to improve water quality and remove harmful toxins. Bioswales would be especially important in this area because of the high water table. With the groundwater being less than two stories under surface level, having bioswales could improve the water quality of rain and runoff before it enters the groundwater and then Willamette river (City of Portland Environmental Services). These swales are easy to maintain. According to the US department of agriculture, bioswales require less maintenance than turf grass because they need less water and no fertilizer. Bioswales are also a great way to add green space to an urban environment. They can be landscaped in a variety of ways and become a beautiful part of the natural culture of a city (City of Portland Environmental Services).

Permeable pavement

Permeable surfaces are infrastructure that both provide storm-water infiltration and surface structure. Similar to a bioswale, they filter water through sand and other porous material that lie under the surface (City of Portland Environmental Services). There are a wide range of places that permeable pavement can be used. In Old Town a great place to add permeable pavement would be in the many surface parking lots. This would be an environmentally friendly and creative way to add green space to what is traditionally a solid block of concrete. Permeable pavement can also be used on low traffic streets. First Street, in the Old Town District, would be a prime place to add permeable pavers. It would help to lessen the harsh, stoney feel of the street and be a great way to attract pedestrians. And finally, these permeable pavement surfaces can be used on walkways. There are many environmental benefits to permeable pavement, including surface water management, appearance and they also serve as groundwater and aquifers are replenishers.

Recommendations:

1. Expansion of sidewalks to a minimum of 12 feet
2. Creation of multiple zones within the sidewalk space
3. Addition of cast iron lights to aid pedestrians and reduce light pollution
4. Implementation of grass sidewalks
5. Implementation of grass-lined Max tracks
6. The use of permeable pavement on all surfaces
7. Landscape planters added to a minimum of three main streets

8. Addition of street furniture which includes: public art, benches and tables, planters, trees and other foliage, trash cans, street vending, restrooms, and signage.
9. Implementation of a cycle track
10. Addition of bioswales wherever possible

References

- Andreades, D. (2013) *Old Town Havana, Cuba*. Eugene, Oregon. Presentation.
- Beatley, T. (2011). *Biophilic Cities: Integrating Nature into Urban Design and Planning*. Washington, D.C. Island Press.
- City of Berkley, Planning and Development (2012). *Downtown streets & open space improvement plan*. Retrieved from website: [http://www.ci.berkeley.ca.us/uploadedFiles/Planning_\(new_site_map_walk-through\)/Level_3_-_General/6-StreetsOpenSpace-FinalforCouncil-71210\[1\].pdf](http://www.ci.berkeley.ca.us/uploadedFiles/Planning_(new_site_map_walk-through)/Level_3_-_General/6-StreetsOpenSpace-FinalforCouncil-71210[1].pdf)
- City of Portland Environmental Services, (n.d.). *Stormwater solutions handbook*. Retrieved from website: <http://www.portlandoregon.gov/bes/article/129057>
- City of Portland Planning and Sustainability Bureau. (2013). *West Quadrant Plan, Old Town/Chinatown*. Retrieved from <http://www.portlandoregon.gov/bps/>
- Downtown Alliance Streetscape Steering Committee, The (2006). *Downtown streetscape design guidelines*. Retrieved from website: http://www.downtowngr.org/documents/downtown_streetscape_design_guidelines-intro,conditions,framework.pdf
- Dubbeling, M. (2013). *Old Town Shantou, China*. Arnhem, The Netherlands. ISOCARP.
- Jacobs, A. (2001). *Great Streets*. Cambridge, Massachusetts. Massachusetts Institute of Technology.
- Kost, C., & Nohn, M. The Institute for Transportation and Development Policy, (2011). *Better streets, better cities*. Retrieved from website: <http://www.itdp.org/documents/BetterStreets111221.pdf>
- Metro. (2002). *Creating Livable Streets: Street Design Guidelines for 2040*. Portland, Oregon. Metro.
- Metro. (2002). *Green Streets: Innovative Solutions for Stormwater and Stream Crossings*. Portland, Oregon. Metro.
- Metro. (2002). *Trees for Green Streets. Portland: An Illustrated Guide*. Portland, Oregon. Metro
- Stephens, R. (2012). *Downtown Streetscapes*. Eugene, Oregon. University of Oregon.
- United Nations. (2012). *United Nations Enable*. Retrieved from <http://www.un.org/disabilities/>

Track 4: International Planning Exchange

49th ISOCARP Congress Proceedings

Istanbul's Changing Skyline: The Effects of Landmark Projects

Kerem Yavuz ARSLANLI, Istanbul Technical University, Institute of Social Sciences.
Turkey

Abstract

After 2002 economic crisis in Turkey real estate market is evolved with respect to international globalization agenda. Between the years 2002 and 2006, Turkish economy has grown by 7.5%. Consequently, private consumption expenditure have increased by 8% annually, by 6% per capita and private sector investments in fixed assets have increased by 23%. In parallel, the housing and commercial real estate sectors have also demonstrated a considerable growth. Foreign capital investments and the shares of international investors in commercial real estate's have also increased (PwC, 2012). In this paper multi-centre development of Istanbul is investigated with respect to Office, Retail and Residential markets. The Central Business District of Istanbul begins with the Barbaros Boulevard, continues along the Büyükdere Avenue and reaches to Maslak. The high-rise plaza type offices on the Esentepe-Zincirlikuyu-Levent-Maslak direction have contributed to the development of this central business district. Istanbul as the biggest city of Turkey affected with much severe planning problems within last decade. This paper investigates the possible outcomes of changing skyline of Istanbul with respect to planning future of the city.

1. Introduction

Rapid and unplanned growth after 1950 in Istanbul, including heavy industrialization, valuable city land and identity has been lost. Today, population growth and economic development of the service sector and as well as the growth and development of telecommunication technologies has encouraged the development of many sub-centres. After the 1980s, the developments of a multi-center of major cities are found in many countries in Europe and in the United States (Gordon and Richardson, 1996) (Hall and Pain, 2006). McMillen and Lester (2003) had predicted in Chicago, the number of sub-centres in 1970, from 9 to reach 24 at 2040. In particular their model showed the centres to be evolved along the highways. In Canada, Coffey and Shearmur (2001) examined the development of a multi-centre, especially in Montreal. Rowland and Gorbon (1996) as an example to developing countries in Mexico City and Dökmeci and Berköz (1994) in Istanbul demonstrated improvement in a multi-centre development. In addition, Richardson and Bae (2005) examined multi-centre developments in large number of developing countries.

The multi-centre development of Istanbul, has led to the collapse of the historic centre structural form. In addition, since the needs of modern office buildings, transportation network, and parks, and historic preservation district is unable to meet the needs of increased traffic due to the restructuring and growth control has encouraged the development of the new centres around the city (Dökmeci and Çıracı, 1990; 1999).

New sub-centres, along the highways, close to the university and large public housing projects developed in such a large investment in socio-economic and physical environment has encouraged the restructuring. Meanwhile, for the revival of the historic centre and the historic neighbourhoods economic development projects have been started (Ergun, 2003). In 1990, the pedestrianization of Istiklal Street, the development of trade, and functional change has encouraged the restoration of the buildings.

The last 10 years there has been 10 to 15 times increase in the real estate market of Beyoğlu by national and international real estate investors (Dökmeci and Özus, 2005). The historical peninsula, in the municipality of Fener and Balat UNESCO Funds investments in infrastructure and functional restoration of the buildings has encouraged the exchange of population and gentrification. As a result of this development, the increases in prices, local and foreign investors are attracted to this region (Ergun and Dundar, 2004).

In the Golden Horn, the investments made for the cleaning of the surrounding encouraged a revival of important historical buildings (Baycan and Seda, 2003). For example, Kadir Has University in Cibali Tobacco Factory, Eyüp Feshane Fairgrounds, Golden Horn Congress and Culture Centre, Silahtar Ağa Power Plant, Bilgi University Museum of Industry and Shipyards has been some examples of these important revitalizations.

And functional transformation of these buildings started economic development around the neighbourhood. As a result, sub-centres around Istanbul, re-triggering the recovery to economic development by investment in the city's historic neighbourhoods. The internal dynamics of the city's major economic opportunities mobilized for real estate investors.

In this study, the land and housing values in Istanbul, office and retail trade, real estate prices in the city such as the distribution of rental values were examined.

2. Multi-Centre Development of Istanbul

There are many factors that affect the real estate prices in Istanbul, for example, history, quality, and socio-economic characteristics, the location in the city, transportation facilities, natural beauty and views, (Özus and other, 2007). Istanbul, the development of a multi-centre circles around them, affect the functional restructuring of real estate values, and in particular to promote the restructuring of slums and the actual value of land in the city to redevelop a very precious opportunity created indirectly.

Distribution of Land Values

Examining the distribution of land values in Istanbul, as a port city in history, places of work to take place immediately behind the port and the transportation system to be developed as a centre of high land values in the centre and near seaside. In addition, recently-built highway intersections, and their paths along the sub-centres, land values increase in a stepwise fashion according to their importance. Meanwhile, despite being advantageous in terms of accessibility, which is still low value land areas will be investigated in the model.

Distribution of Housing Values

In this study, the distribution of housing values compared to that of 1990 and 2010. Istanbul's population to grow rapidly after the 1950s and 1980s due to the economic development and globalization, urban socio-economic and physical structure has led to undergo a wide range of transformation (Dökmeci and Berköz, 1994).

This transformation in the city, providing new business opportunities and revenue growth, has led to changes in the internal dynamics of housing prices (Dökmeci et al., 2003). In addition, inflation is higher than in previous years, as well as in other developing countries with similar conditions as Istanbul, safe and efficient as an investment in the real estate market has developed rapidly (Önder, 2000).

Socio-economic differences between the districts of the city, has caused the 3 focal points with high housing prices.

(1) With the world-renowned natural beauty and rich mansions and also important companies, the three universities and the second biggest shopping centre, close to the Bosphorus coast

(2) Situated on the west of Istanbul, such as the three largest shopping centre in Istanbul Ataköy and the establishment of a housing estate, which started life in the modern city with easy access to the centre and the ring roads Bakırköy

(3) In the countryside and the sea coast with luxury homes, 10 km. long street in Baghdad, including the luxury shops and entertainment facilities around the neighbourhoods with enhanced luxury, Kadıköy (Dökmeci et.al., 1996).

three common characteristics of these high-demand residential areas are; geographical located on the seaside, once the summer resort for high-income families, Istanbul's richest income layer regions are preferred to locate, commercial shopping centres contain the most luxurious styles, that they have a highly acclaimed modern apartment buildings and villas. In 2010, the city-wide distribution of housing prices is not only beaches but also the luxuries of sites around the city have also seen that the high housing price.

These new residential units, close to the new sub-centres in the surrounding area, a high level of socio-economic environment, social facilities, and the physical environment on a regular basis to present a new way of life plays a role in the increase in housing demand and prices. In these examples, an international award winning and low density residential unit, Istanbul Istanbul project, and on the Anatolian side of Istanbul, a very luxurious life with a high level of density "Up-Hill" project.

With newly emerging sub-centres of these settlements have a mutual interaction in terms of rent, the prices that provide dynamic and productive investment opportunities. In addition, to overcome the deterioration of the historic centre, investment in infrastructure has increased the house prices. Cihangir and Asmalı Mescit are given as an example for economic developments.

These developments are become opportunity to invest at the level of districts, but many neighbourhoods are not yet developed. Municipalities of Fener and Balat districts improved infrastructure in order to attract investors and accelerate urban transformations In addition, residential areas of Istanbul, which is surrounded by the sea on three sides of city, offers the opportunity to urban transformations.

For example, Salacak and Harem Coasts, world-renowned view of the famous Topkapi palace, real estate prices highly effected. In addition, the planned development of the socio-economic environment is the most important factor affecting the prices. For example, in the areas of slum housing prices, there are major differences between the prices of housing sites developed and planned.:

Spatial Distribution of Office Rent Values

Economic accumulation of real estate investments is an important part of the people in Turkey (Onder, 2000), and this rate of investments in the office is increasing. After the 1980s, economic restructuring and globalization, international trade relations, the increase in per capita income and a strategic location between Asia and Europe in Istanbul, has led the size of the increase in the number of companies and therefore has encouraged the growth of the demand for office space. Istanbul office areas, in parallel with the development of the commercial potential of the city since 1970, with the support of the Bosphorus bridges and roads grow to the north of the city.

In particular, banks and insurance companies need a new and larger office spaces, between the years of 1960-1985, Karaköy-Salıpazarı-Fındıklı were satisfied with the built office buildings during this period, Turkey's largest corporate groups and foreign companies settled in these regions.

On the other hand, during the same period office needs of small and medium-sized firms, find their place formerly Taksim-Sisli, and later in Şişli-Gayrettepe axis obtained by converting housing into office space (DTZ Pamir and Soyuer, 1996). Since 1985, a significant increase in the flow of foreign capital, consequently opening of the financial sector under the leadership of Turkey's economy booming emerging needs of modern office building, which was built Barbaros Boulevard and Büyükdere axes, were met with Class A office buildings (DTZ Pamir & Soyuer, 1996).

Istanbul's main office areas that make up the new sub-centres are described below:

Levent Region

The presence of the ring road links to the Bosphorus bridges, with old industrial plants have large plots of Istanbul, the due to its proximity and easy access to other sub-centres (Maslak, Mecidiyeköy, Zincirlikuyu) Istanbul's developed a prestigious office buildings, multi-national companies, became the centre of a preferred business holdings. In 2000, the opening of the subway, and Levent and Etiler shopping areas, restaurants, cafes, social and cultural facilities, the presence of the attractiveness of the social demand for the region is become higher (Aksoy, 2005). Therefore, this region is the region of at least the vacancy ratio and the highest rent values.

Maslak Region

Development axis from south to north in the Central Business area of Istanbul represents the most northern point. In Maslak, surrounded by forest areas, it is impossible for CBD further enlargement Maslak business development centre, has pioneered by Alarko Company which had built new office buildings across ITU campus.

Istanbul's most luxurious office buildings and hotels built with high precedent for this has been the most important business centre. In 1995, the Istanbul Stock Exchange moved to new premises in İstinye, banks and brokerage firms were effective for the demand office space near Maslak. As Levent, Maslak, the presence of a wide range of suitable land and the accompanying high building permits, have allowed for the construction of high-rise office buildings.

Airport Region

Airport, the surrounding low-rise office buildings are being developed on the E-5 and TEM motorways. Completed in 2001, the World Trade Centre of Istanbul, the largest office park in the region is an important investment increases the stock of office (Kuzeybatı, 2004). The development of this region, the large press and broadcasting organizations "Press Express

Way" that centres on the support organizations that want to be close to them, as well as buildings in the area close to the factories tend to move factories are effective in the management units (Aksoy, 2005). In the region vacancy rates are more than the other centres and rental values are significantly low.

Kozyatağı Region

The richest region in terms of office stock in the Anatolian side is equipped with a combination of many different land uses. This region began to develop after 1995, and the presence of empty land, to be the intersection point and the surrounding commercial uses due to features such as luxury housing settlements primarily been a point of attraction for large shopping centres.

Besides regional commercial developments (Metro, Carrefour and Bauhaus) as well as the majority of this period, there has been a Class A office space development took place. (Çelen Valuation, 2003). In particular, the demands from multinational and foreign company's plazas began construction in 1997; the majority of office was put into service in 1998-2000.

The main reasons for foreign companies to choose this area are, accessibility, proximity to E-5 and TEM motorways and white-collar workers employed in these companies, the vast majority (65%) has the Anatolian side residence. In addition, the upper-middle income group experienced Kozyatağı residential areas (such as Ataşehir) office in certain areas not separated by a boundary, office space provides integration with other urban areas of activity. Residential, office and other commercial uses of the coexistence of urban scale, enabling the region to be active at any time of the day, although a certain degree of synergy between land uses (Çelen Valuation, 2003).

Altunizade Region

Altunizade zone, starting with Koç Group and its companies have started to develop with a combination of administrative centres. Altunizade region that requirement when being closer to the city, the majority of which is classified as B, the occupancy rate varies according to economic conditions, mainly the structure of the company has an office administrative centres are located. Altunizade, suitable for the establishment of a new regional centres TEM connection with the company, but the height of the buildings limited due to prevent the negative effect on silhouette Camlica, the stock of the building cannot fully meet the needs of the market (Aksoy, 2005). Although one of the least vacant office stock, the rental value of the lowest in the city.

Kavacık Zone

Kavacık Zone is recently evolving office market as an alternative in the Asian side. Because of being near to Fatih Sultan Mehmet Bridge and close to Maslak region, Kavacık played a role in the development of the business centre. However, residential buildings, particularly the lack of permits, as well as the region's transport, energy, telecommunications, infrastructure and social facilities, such as a number of deficiencies and have lower standards of office in this region prevents the formation of high-quality tenant profile (Aksoy, 2005). Office market rents rising on the European side, as well as the emerging demand for central of operations began for a new offices, and residential areas.

Still, Uskudar district, converted to industrial areas, large office buildings, with lower rental rates, especially banks and retail companies settles operations centres (Çelen Valuation, 2003). However, the planned new centres are needed and unplanned developments cause the loss of customers and revenue.

Distribution shopping centres in Istanbul

Istanbul, Turkey's largest and richest city due to a very lively and has a variety of types of retail trade. This commercial wealth of traditional trade routes between continents for centuries on the extremely important due to the fact that having a strategic position. In addition, the economic restructuring of the 1980s in Turkey as a result of displacement of resources and trade in the city of Istanbul has increased the participation of the world capitalist economy (Tokat and Boyacı, 1999).

As a result, consumer culture, these changes due to the rapid increase in population and income, which has great potential for the development of retail trade in the city of Istanbul, the restructuring of commercially viable form, and encouraged the formation of new sub-centres and shopping centres (Terzi et al., 2006).

Retail trade constitutes 40 to 45% of the consumption of families and consumer spending rose from 8.8% in 2005, to 9.6% in 2006. 19th Middle of the century, department stores, has created an evolution in the development of trade. Shopping, entertainment an enjoyable way to spend time became the new bourgeois aims (Bowlby, 1985).

At the same time, large stores in major cities, the people as a symbol of prestige, prepared an environment plays a role in the creation of the national middle class culture. New community of people in big cities to impose themselves from clothing, upholstery homes until every issue became a focal point of directing their lives (Miller, 1981).

Today this trend, with the effect of globalization on the international level, in the form of mega-markets, and increasingly continue. Recently, the mega-markets opened in Istanbul and their great potential in this area reveals that the interest. Increase in the level of income and car ownership, a new way of life and consumption met through the internet and TV people that require large investments in order to meet the demand for a wide variety of shopping centres have been established (Erkip, 2003). Istanbul for the first mega mall, Galeria, was founded in 1988 Bakirköy. Then the numbers began to increase rapidly, and today has reached 56.

In particular, the mixed-used, i.e. in the form of land use, commercial, office, residential and shopping centres are planned in the form of (Akmerkez, Kanyon and Metrocity, etc.) seems to be very successful. The highest rental values, it is a successful shopping malls. Be explained by the spatial distribution of shopping centres in Istanbul rings. 1 Radius of 10 km from the centre. 1, which is ring, shopping centres, there are 46% and 50% of leasable area. This region represents 44.32% of GDP. 2 positioned around the first ring in the ring, shopping centres, and 54% of the leasable area is 50%. This area represents the 41.93% of the GDP. Although, leasable area is divided equally among the regions, shopping centres clustered particularly in rich districts. 12 units are not currently shopping centre located in the county. Their commercial potential is calculated, which are close to high-income neighbourhoods inhabited districts of the layers was found to have more potential (Terzi et al., 2005).

Alternative Methodology for Istanbul Land use Pattern

A city consists of different functions that serve different purposes and affect each other. Spatial layout of the city includes a wide range of elements in a network of relationships. Individuals, private firms, public sector, they all want to be close to the sources of labour and services. Therefore, based on a wide variety of purposes cities complex planning system according to one aspect is not possible. One of the most important tasks of urban planners is to determine the places, a variety of functions related to each other in an effective manner by objectives. Planning of these functions independently of each other is not possible. An error

on one objective, not only for that functions, but may also be related to an effect on the other functions of the city in terms of functional and economic development. At the same time, the city may lead to an increase in operating costs. In contrast, the selection of a function itself to be successful in the right place, as well as the development tool environment can be, for example, have the tool, such as the conservation of Historical Peninsula City Gardens surroundings.

A wide range of multi-purpose land use models are available for site selection. Carver (1991) on the selection of land-use in the multi-purpose assessment techniques, contrary to each other, according to the criteria and objectives for the evaluation of alternatives, combined with the use of GIS technique. In another study, solve the traffic congestion in an area, or if there is congestion and housing to solve the balanced distribution of work force planning technique is developed to describe in a multi-purpose modelling (Horner and Muray, 2003).

Location models previously developed a wide range of multi-purpose land use objectives to take into consideration, but ignore the impact of different land uses. Whereas this purpose, a number of functions play a major role in the selection of, for example, the minimum distance to a residential site and to benefit from the increase in value and as well as a proximity to a large shopping centre. Hence, in this model, two objectives are to evaluate alternative land use scenarios have been considered in the choice of: (1) the maximum of profit, and (2) to be the minimum distance between the inter-related functions (Dökmeci, et al 1993).

The first goal in the selection of an area of land use to do is to get the maximum profit. According to this purpose, the value of a plot of land in the surrounding environment due to the use of the land as it depends on the value of investments in the plot. For example, some of the other more suitable for the selection of land plots in residential, commercial and entertainment facilities of the place because they are more likely to. Therefore, this objective is being determined by the land use, so as to make maximum profit will be assigned based on the settlement.

Earlier Alonso (1964) and Mills (1972) studies, showed that a plot of land value changes according to the distance from the city centre. This assumption is valid for a single-centre city. However, the development of multi-centre cities, as a result of a plot of land in the vicinity of the city around the type of land use, these variables can affect more than the value of the land. For example, the value of a plot of land around the trade may vary according to whether residential or industrial. As a result, the structure of the city, urban functions arising in the competition for the selection of the most efficient in the use of land formed by the selection. Therefore, the purpose, the proceeds from a plot, it and the surrounding land to be a result of the interaction between land-use types have been formulated by the adoption. For example, the luxury residential as well as commercial area next to the park is located next to or higher than the rest of the district (Dökmeci, et al 1993).

On the other hand, creating some of the industry as well as environmental pollution, land-use types have been caused a decrease in the relative values of the surrounding land. Therefore, the effect of any kind from the environment must be taken into consideration. Based on this purpose, the maximum was based on an investor's profit. This objective has been formulated as follows:

$$Max z = \sum_{i=1}^r \sum_{j=1}^r \frac{V_{ij}}{1 + d_{ij}^{\alpha}}$$

Z: The total revenue from land use in the region,

V_{ij} : i and j are the interaction of land use types in terms of value,

d_{ij}^{α} : the distance between i and j types of land use. α is taken as 2

As a secondary aim, functions as an important factor influencing land use decisions has been considered to be the minimum distance. In the city, more or less of each land use type has a link with the other. Thus, each unit of land use creates a harness around the relationships between units of transport. Thus, every unit is, relative to the location of each unit, so tightly bound to the other units. This is the minimum movement of goods and people between the units; the second purpose of this model is formulated as follows:

$$\text{Min } T = \sum_{i=1}^r \sum_{j=1}^r u_{ij} d_{ij} b_{ij}$$

Wherein,

T: total transport in the region,

u_{ij} : transportation between units i and j, the amount of land use,

b_{ij} : i and j $b_{ij} = 1$ if land use transport link between the units, or $b_{ij} = 0$

The choice of two very different purpose of land use, exposes two very different outcomes. For example, the use of land in a way that accessibility priority, residential areas gathered around and business centres and industry. If we choose to use the land in a way that the maximum gains, residential areas, gathered around commercial activities, parks and water elements. Therefore, the aim of balancing the conclusion that both arrive, a multi-purpose decision-making method is needed. This multi-use decision making method can be as follows:

$$E(a) = \sum_{k=1}^n u_k e_k(a)$$

Wherein,

$E(a)$: (a) the total activity of the alternative,

u_k : k coefficient indicating the importance of the purpose,

Additive (a): (a) the alternative of k according to the intended activity,

n: Number of goals

Indicating the importance of the objectives coefficients were determined by sensitivity analysis. Accordingly, the first goal and the second goal weight coefficient 0.25 and 0.75 respectively. These coefficients are within reach of the investments made and the different types of land use, value of time lost in traffic will vary depending on the time according to the coefficients. According to an alternative with the highest total efficiency of both purposes, is considered to be the best choice in the land use.

Alternative for Istanbul Sub-Centre Silivri:

A multi-purpose land use, site selection model applied to Silivri, the newly designated sub-Centre for Istanbul. Consists of housing development, including university-industry-trade

areas, recent development plan are taken as reference. The main function is planned to be placed in 4 different areas of transportation and value for interaction was prepared for. University, Industry, Trade and residential areas were evaluated according to the model of the fourth alternative. 250 meters of grid is taken as basis for cell size, the proposed plan is 5 km wide on seaside. Average lot size in the region is from 225 to 275 meters.

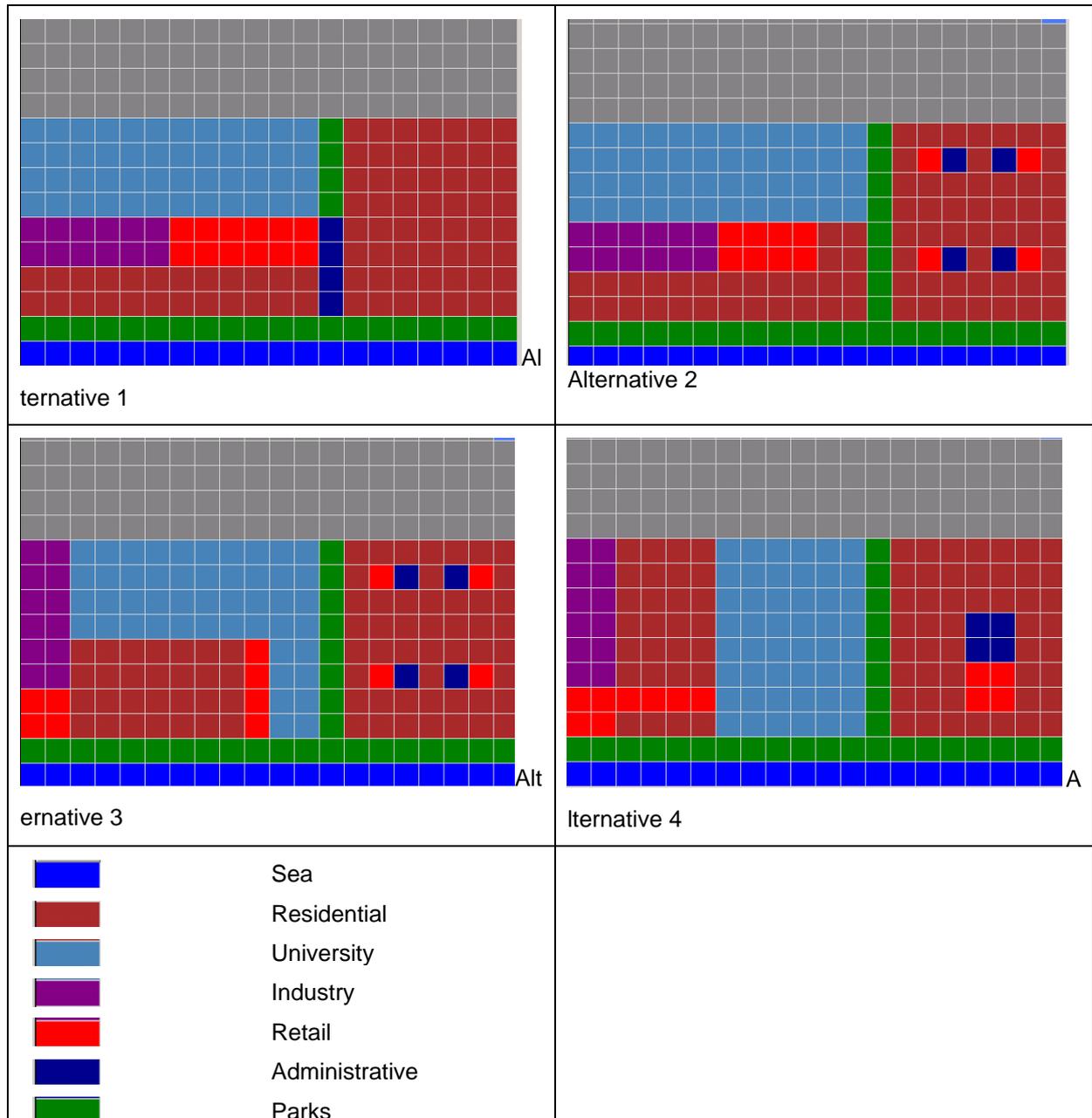


Figure 1 Different Land Use Model for Istanbul Silivri Sub-Centre

Table1: The amount of transportation between the types of land use matrix

	Sea	Residential	University	Industry	Retail	Administrative	Parks
Sea	1	1	1	1	1	1	1
Residential	1	2	3	7	5	3	4
University	1	3	1	3	2	2	1
Industry	1	7	3	4	5	2	2

Retail	1	5	2	5	3	3	2
Administrative	1	3	2	2	3	2	1
Parks	1	4	1	2	2	1	1

Table 2: Value Interaction between Different Types of Land Use

	Sea	Residentia	University	Industry	Retail	Administrativ	Parks
Sea	0	10	10	10	10	10	10
Residential	0	5	3	10	2	6	8
University	0	3	5	1	6	5	7
Industry	0	-7	6	10	6	5	6
Retail	0	8	5	-1	10	8	7
Administrativ	0	10	5	-3	8	10	8
Parks	0	8	6	3	6	6	10

Table 3: Total Values of Different Landuse Alternatives

Land Use Values	1. Alternative	2. Alternative	3. Alternative	4. Alternative
Accessibility Value	0,0837	0,0819	0,0840	0,0847
Revenue Value	0,9990	0,9805	1,0932	1,1874
Total	1,0827	9,8870	1,1772	1,2721

Different from each other in different land use choices by considering four alternative land use evaluation method was developed and evaluated, and the results for each lot are given in Table 5. A single centre, two sub-centres and a large number of land-use alternatives developed by the sub-centre activity was calculated. According to these results, based on the centre second and forth alternatives are higher than the current plan. Other second and third alternatives; expansion of trade, although with increased accessibility weakens the effect of the increase in value. In contrast, the effect of the increase in value as a single centre; decreased availability and are limited to only around the centre. Therefore, an alternative to the settlement with the two sub-centres, it can establish the best balance between the two objectives for the activity is the highest.

Although here, only two main objectives, land based location problems formulated, the purpose is based on the development of multi-criteria modelling. Balancing the conflicting interests of the various groups of land use objectives in the presence of solutions to the problem of selection, the goal is difficult as their numbers grow. For example, the slum transformation project varies according to each individual purpose. Decisions on this issue in accordance with the principles of democratic decision-making procedures are required to submit a multi-purpose (Kigtenberg et al., 2001). In this case, the model results, needs to be adapted according to other purposes.

Furthermore, we examine here only in models of land use, land-use in the selection of the most efficient in order to meet the demand has been developed. However, nowadays, the choice of a town in the land use of a region, a country, or with the effect of globalization on the international level need to be determined in response to society needs. It will be for the creation of a new landuse, as can be in the form of conversion of existing landuse.

In addition, by evaluating alternative land uses; density, transportation, energy consumption and environmental pollution, on the one hand, increase better economic development, on the other hand site selection models are better for the development of sustainable land use patterns. At the same time, the decision of the density of residential, private and public facilities, schools, recreational facilities, fire brigade is also important for the determination of effective site selection. Over time, emerging technologies can be adapted to the requirements of land use systems have the flexibility to provide the efficient use of resources. Advances in transportation and communication; caused large-scale changes in the land use at the 19th century. In this context, developed 'smart growth' concept aims to reduce the negative impact of the spread of a city (Holcombe and Stanley, 2001), and a wide range of land-use in the future will affect the choice of the cities.

However, the choice of land-use patterns in the results of the decision-making process should be considered initially for solid economic fundamentals, and then fit the model taken into consideration social, political and other conditions should be adapted. Land-use patterns in the selection of design, economic, sociological, and research and evaluation of the results of the traffic load as the subject of the proposed research to be conducted in the future.

Distribution of Population in Istanbul

One of the most important goals of planners is, taking into account the connection between the elements that make up the space within the city. Residential areas and business districts are considered as the most important elements that make up that structure (Dokmeci, 2005).

There are a wide variety of variables that influence the choice of location of residential areas. Supply and demand for housing depends on the development of residential areas in the city (Green et al., 2005). Housing supply: is effected by, vacant land, land, and the price of housing, housing types, distance to work places, social facilities, socio-economic status, and the status of the buildings (Malpezzi and Mayo 1997). Demographic and social characteristics of the population of a country are based on the demand for housing as well as economic factors. Variables related to the demand for housing, population growth, birth rate, marriage rate, age at marriage, family size, income, tax, interest rate, inflation rate, unemployment rate, (Arimah, 1992) .

In order to predict future land use and density in a precise way, the past and the present land use and transportation system, depending on the density of the collected data must be evaluated. For the modelling of the whole urban area, each containing homogeneous function areas are divided into small areas, for example, residential, office, park, such as commercial and industrial areas. Therefore, the appropriate unit of area on the census can be considered as the basic units of the neighbourhood (Dokmeci, 2005).

While there are many variables that influence the choice in residential areas, often models on this issue, using a small number of variables that have the greatest impact. Increase the cost of a very large number of variables, such as the use of the calculation process is also difficult. In this regard, based on the models of gravity theory, for a small number but they are formulated according to the data strongly preferred. Hansen is one of the models of this type of model. According to this model, the development of a residential unit, is inversely proportional to the distance from the business center, business center and the surrounding empty fields is proportional to the number of employees. The distance between the place of business of housing, especially in western countries, research, housing is emerging as an important factor in the choice of location (Levinson, 1997; Cervero, 2006).

Hansen Model formula given below:

$$G_j = G_r \left[\frac{L_j A_j}{\sum_{j=1}^n L_j A_j} \right]$$

wherein,

G_j: j district population to settle

G_t: City population growth

L_j: j district vacant land

A_j: Attractiveness Index

Of J Attractiveness index is formulated as follows.

$$A_j = \sum_{i=1}^n \frac{E_i}{D_{ij}^\lambda}$$

wherein,

E_j: j district, the number of employees

D_{ij} ^ λ: the distance between i and j districts

This model, as a result, increasing the population of the city districts that have empty fields, business opportunity, and how other districts will be divided according to the distance. Here the number of houses in general, can be calculated by dividing the number of households, the average number of population in the district. More specifically, the residential neighbourhoods to choose different types of families of different sizes for the calculation of the distribution must be taken into consideration, for example, unmarried and childless families, neighbourhoods close to the centre, garden houses or sites to choose the environment, such as families with children (Kim et al., 2005 Hoshino 2011). In addition, the income level of families to settle in the new districts and the distribution of both types of residential neighbourhoods, the distribution must be taken into consideration. Therefore, the demographic and socio-economic characteristics of families preferred neighbourhood characteristics are needed to be investigated (Dökmeçi and Berköz, 2000).

The results obtained with the model of Hansen residential areas are in need of social, cultural, economic, and recreational areas can also be used in the planning. Establishment of new settlements and the growing population of the city of new centres to be built in these areas can lead to the restructuring of the business relationship of housing all over the city. This model could be run as sequentially until, residential and business areas as a result of the implementation of certain land-use change obtained.

In addition, the scope of the variables in this model can be expanded or different aspects can be addressed. For example, the space used to refer to the 'L' variable does not exist or is empty in less dense areas, the density to be increased at any time, the difference between the target density and current density can be expressed in the formula (Dokmeçi, 2005).

Model adjustment (calibration), coefficient α by giving different values, different times as a result of the model by comparing the value detection are carried out as the best expression of the real trend. The distance can be expressed as the Euclidian or time of commute (Dokmeçi, 2005). Generally, individuals seek a balance between the theoretical cost of land and transportation (Alonso1964). But the key to this, as well as other features that relatives and the social environment (Dokmeçi and Berköz 2000), school quality, commercial facilities, green spaces, leisure facilities, prestige zones (such as Baghdad street) and revitalization projects (in Beyoğlu etc.) may influence the choice of residential location.

Population Distribution Model

TURKSTAT employment data is used in the model for 32 district of Istanbul. Assumed to be 3 million people added to the population and employment in the total population of 15 million will be allocated according to Istanbul (Table 1). Districts with more free space available in the European side are one of the most highly populated districts. Küçükçekmece the second largest free space (14.4%), and the third largest in the labour force (6.39%) will have the highest population (26.56%). In the meantime, Eyüp, both empty fields (2.19%) as well as labour force (1.76%), the second largest population group, although more (24.54%) allowed to produce its own due to its central location. Eyup district to the free space (2.4%) as well as labour force (3.8%) due to its central location, although it is less than the third largest population group (12.12%) will attract. Nevertheless, the Silivri district of Istanbul, the largest free space (38.5%), although with the lack of employment opportunities (1.0%) due to its distance from the city centre much less population (2.77%) be allowed to produce its own.

The model considered to have a more balanced distribution on the Anatolian side. Tuzla (3.52%) and the Maltepe (3.27%) counties circles break, even if a higher proportion of the population, ranking sixth and seventh are required on the European side. Uskudar and the effect of the precedent raised to increase the space and tries to give the new sub-centre.

As a result, this model calculates empty areas in the districts, the potential labour force, and taking into account the distances to the centre of Istanbul's growing population. Among them, particularly, Kucukcekmece, Eyüp and Gaziosmanpaşa have great potential in the future development of the districts. Then the model reveals their potential for transformation in slum areas. Therefore, the model results, investors, planners and managers of great importance for the city and the region.

Conclusion

Istanbul, population and income growth, the service sector, based in the city's development as a result of advances in transportation and telecommunications, the restructuring of the city, and this encourages residential, commercial and office create opportunities for investments. Land-use decision-making process is a very complex includes site selection. Estimates of population growth, starting from the development potential on the one hand, depending on the location of the settlements, and the physical, socio-economic, legal and political characteristics of the functional needs of the city overlaps with each other to create the most effective form is required.

Hansen model applied to Istanbul districts and increasing the distribution of the population of 3 million were calculated. Küçükçekmece district attracts largest population due to its workforce and empty land. Eyup and Gaziosmanpaşa become second and third, although have small empty land and business areas because of closeness to the center. However, with the most available space Silivri, labour, and far from the center because of the potential to be less able to attract population. On the Asian side, in order to create a new sub-centers, Ümraniye and Atasehir population increased.

Multi-purpose land use, site selection model, applied to a portion of the of Silivri district. Developed four different alternative land use. These alternatives are developed, one in the center, the two sub-center and calculated in two different activities according to the purpose of each alternative. As results being evaluated, including two sub-center was the highest efficiency alternative. single center alternative is not satisfactory in terms of accessibility. Thus, settlement plan with two sub-center has a satisfactory result in terms of both purposes.

In studied together these models can be used to complete each other. At the same time, it is possible to use these models as a dynamic, new development areas designated for the city-wide appeal to all business centers, taking into account new population density of each sub-region, centers and essential services, and this process can be calculated as a result of any

change. Thus, when the size of a city-wide alternative settlement proposals, taking into account all the most effective results can be achieved as a result of the evaluation.

In addition, the sub-centers produced a gradual effect of the interaction and the environment as a result of a lot of alternatives for the purpose of evaluating the size of the new centers and, instead, may be decided taking into account the dimension of time. Thus, the development of the whole city and the economic development of the system to provide the most effective when planned. By investing just as it is today, at certain points, and the creation of high-quality urban services bringing the speculation, raising the quality of life of city-wide, but can provide a healthy socio-economic development.

Furthermore, we examine here only in models of land use, land-use in the selection of the most efficient in order to meet the demand has been developed. However, nowadays, the choice of a town in the land use of a region, a country, or with the effect of globalization on the international level need to be determined in response to a need. It will be for the creation of a new space, as can be in the form of conversion of existing space.

Table 5: Population of Istanbul Districts

Districts	Population	Model Population	Employment	Empty Land Ha
AVCILAR	97904	421924	33252	676
BAKIRKÖY	89446	374367	57647	113
BAĞCILAR	23255	792727	69625	21
BAHÇELİEVLER	33207	681592	78109	35
BAYRAMPAŞA	52023	380290	52786	35
BEŞİKTAŞ	16812	268881	76277	14
BEYKOZ	4490	287760	18547	36
BEYOĞLU	17741	341868	69480	10
EMİNÖNÜ	5363	80598	107345	3
EYÜP	736340	1073726	33474	375
FATİH	17447	561225	44582	15
GAZİOSMANPAŞA	363750	1285327	73323	423
GÜNGÖREN	65917	441104	83251	35
KADIKÖY	19942	931597	136278	55
KAĞITHANE	27615	494481	65421	33
KARTAL	46201	504486	62108	305
KÜÇÜKÇEKMECE	797083	1610095	121556	2466
MALTEPE	98287	560426	42188	537
PENDİK	24282	570146	49878	180
SARIYER	11924	336615	13749	69
ŞİŞLİ	31730	405715	177858	35
TUZLA	105782	244623	39472	1450
ÜMRANIYE	5940	617775	81128	158
ÜSKÜDAR	28679	713714	55210	27
ZEYTİNBURNU	13924	345024	84524	25
ESENLER	38350	635895	30857	36
SULTANBEYLİ	6921	248604	12442	78
BÜYÜKÇEKMECE	112741	192423	86604	2168
ŞİLE	802	36739	1775	75
SİLVİRİ	83227	166054	19506	6581
ÇATALCA	22877	58595	21163	913
Total	3000000	15664396	1899400	17067

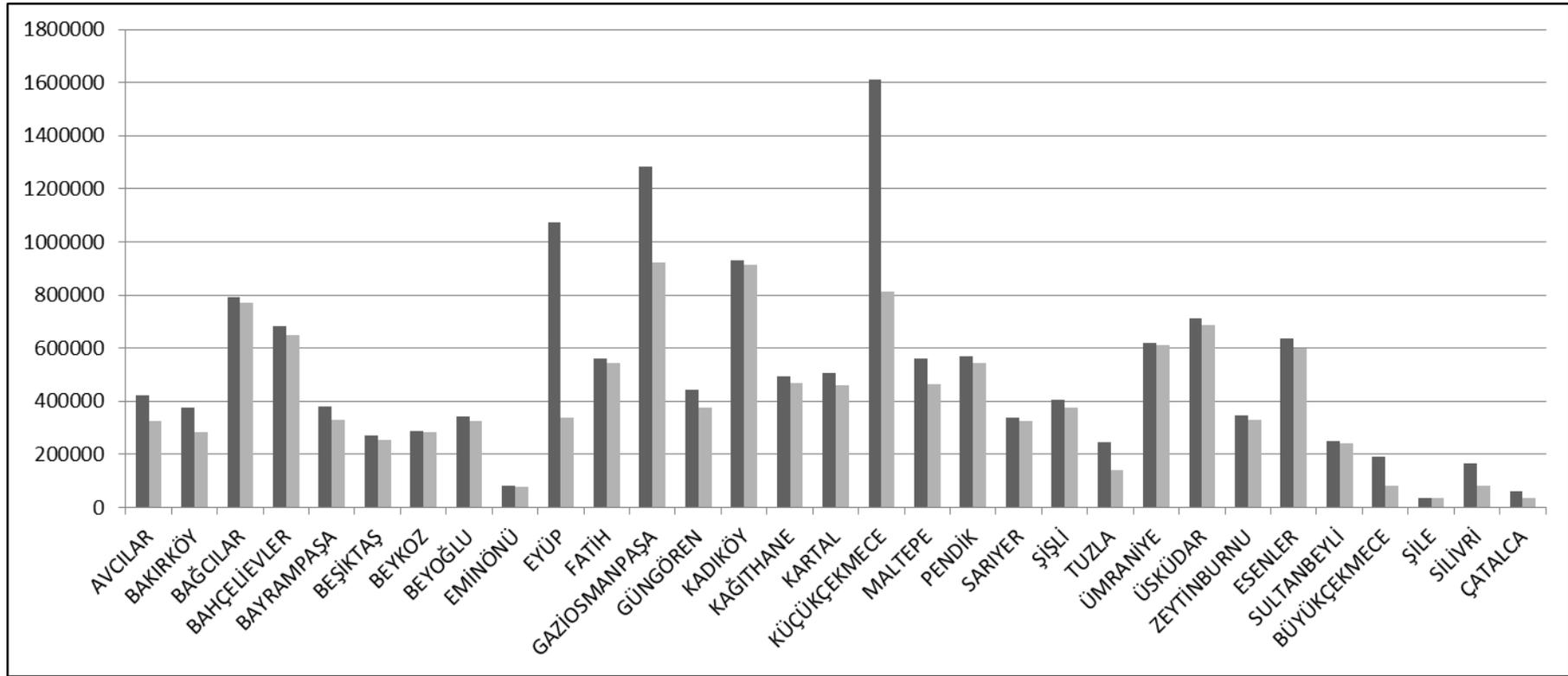


Figure XX: Model Projection and Actual Population in Istanbul

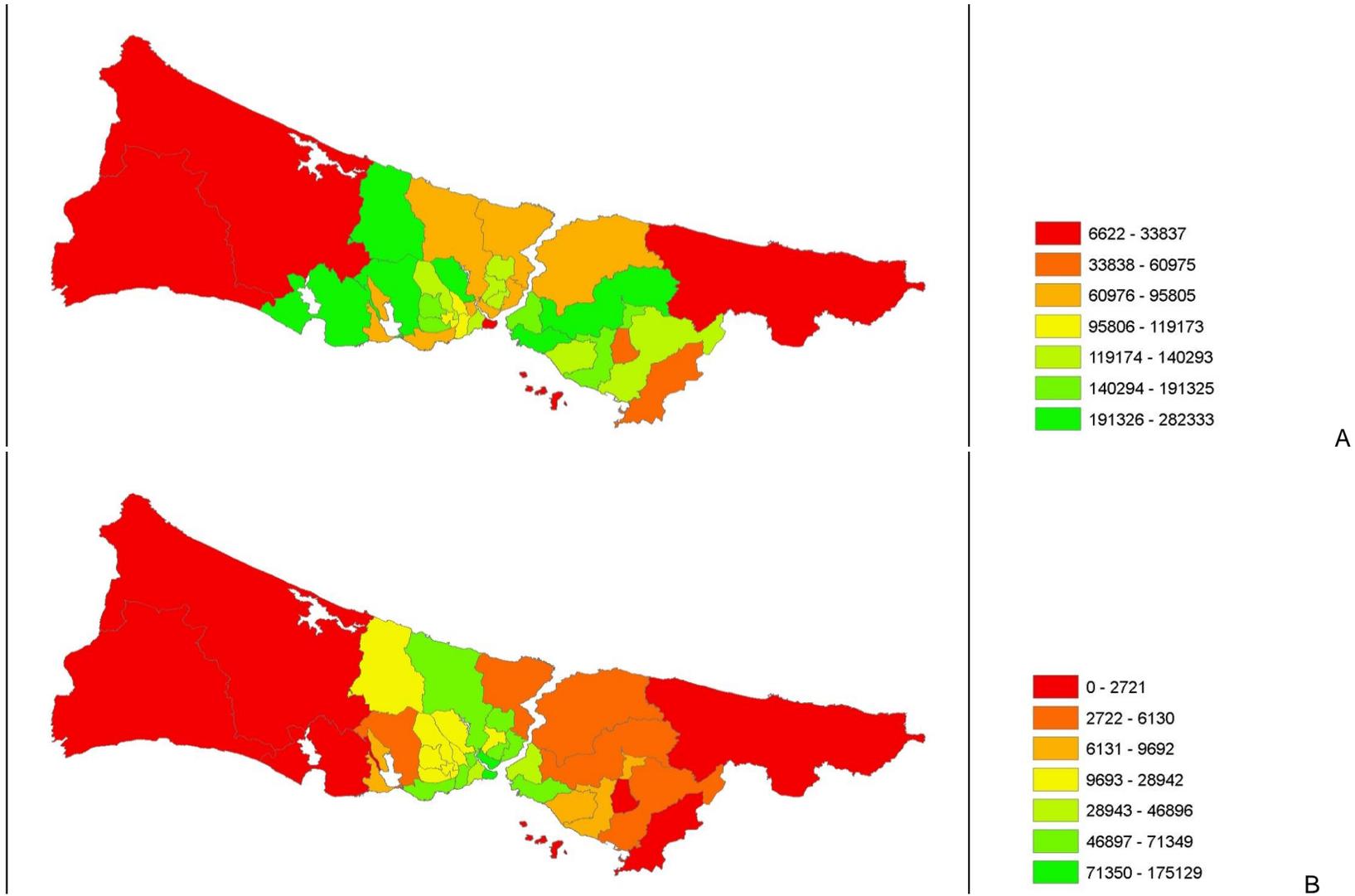


Figure XX: A.Actual Population of Districts B-Distribution of Population according to Model in Istanbul

References

.(

- ALONSO, W.(1964) Location and Land Use: Toward a General Theory of Land Rent , Cambridge, Mass.: Harvard University Press.
- ARIMAH, B.C.(1992) "An empirical analysis of the demand for housing attributes in a third world city," Land Economics 68, 4, 366-379.
- Aksoy, S. (2005) İstanbul Metropoliten Alanında Ofis Kira Değerlerini Etkileyen Faktörlerin Analizi, İTÜ Fen Bilimleri Enstitüsü, Y. Lisans Tezi.
- Baycan Levent, T. ve Kundak, S.(2003) "The role of multi-functional land use in urban redevelopment," in The Economics of Multi-functional Land Use , Eds., Nijkamp, P., Rodenbug, C.A., Vreeker, R., Amsterdam: Shaker Publishing.
- Bowlby, R. (1985) Just Looking: Consumer Culture in Dreiser, Gissing and Zola , New York: Methuen.
- Coffey, W.J. ve Sheramur, R.G. (2001) "Intra-metropolitan employment distribution in Montreal, 1981-1996," Urban Geography 22, 2, 106-129.
- Çelen Değerleme (2003) Anadolu Yakası Ofis Pazarı Raporu, Ağustos, İstanbul.
- Dökmeci, V. ve Çıracı, H. (1990) Beyoğlu , İstanbul: Turing.
- Dökmeci, V. ve Berköz, L.(1994) "Transformation of İstanbul from monocentric to a polycentric city," Planning European Studies 2, 193-205.
- Dökmeci, V., Yürekli, H., Çağdaş, G. ve Berköz, L.(1996) "Residential preferences in İstanbul, Habitat International 20, 2, 241-251.
- Dökmeci, V. ve Çıracı, H. (1999) "From westernization to globalization: An old district of İstanbul," Planning History 21, 3, 13-23.
- Dökmeci, V., Önder, Z. Ve Yavaş, A. (2003) "External factors, housing values and rents: Evidence from survey data," Journal of Housing Research 14, 1, 83-101.
- DTZ Pamir ve Soyuer (1996) Ofis Pazarı Raporu, Ağustos, İstanbul.
- Ergun, N. (2003) "Gentrification in İstanbul," Cities 21, 5, 391-405.
- Ergun, N. ve Dündar, B.(2004) "Functional change as an indicator of transformation near the old center of İstanbul," European Planning Studies 12, 5, 723-738.
- Erkip, F.(2003) "The shopping mall as an emergent public space in Turkey," Environment and Planning A 35, 1073-1093.
- GARIN, R.A.(1966) "A matrix formulation of the Lowry Model for intra-metropolitan activity action," Journal of American Institute of Planners 32, 361-364.
- Gordon, P. and Richardson, H.W. (1996) "Employment decentralization in US metropolitan areas: Is Los Angeles an outlier or the norm?" Environment and Planning A 28, 10, 1727-1743.
- Hall, P. ve Pain, K.(2006) The Polycentric Metropolis. Learning from Mega-city Regions in Europe (Eds.) London: Earthscan.
- KIM, T.-K., HORNER M.W., MARANS, R.W. (2005) "Life cycle and environmental factors in selecting residential and job locations," Housing Studies 20, 3, 457-473.
- Kuzeybatı Gayrimenkul (2004) The commercial property market in greater İstanbul Report, April, İstanbul.
- MALPEZZI, S. and MAYO, S.K. (1997) "Getting housing intensives right: A case study of the effects of regulation, taxes and subsidies on housing supply in Malaysia," Land Economics 73, 4, 372-391.
- McMillen, D.P. ve Lester, T.W. (2003) "Evolving sub-centers: Employment and population densities in Chicago, 1970-2020," J. of Housing Economics 12, 60-81.
- Miller, M.B.(1981) The Bon Marché: Bourgeois Culture and the Department Store 1869-1920, Princeton, N.J.: Princeton University Press.

- Önder, Z. (2000) "High inflation and returns on residential real estate: Evidence from Turkey," *Applied Economics* 32, 917-931.
- Özus, E. ve Dökmeci, V.(2005) "Effects of revitalization in historical city center of İstanbul," *International Real Estate Review* , 8, 1, 144-159.
- Özus, E., Dökmeci, V., Kıroğlu, G. ve Eğdemir, G.(2007) "Spatial analysis of residential prices in İstanbul," *European Planning Studies* 15, 5, 707-721.
- Richardson, A. ve Bae, C.-H.C. (2005) *Globalization and Urban Development* , Berlin: Springer.
- Rowland, A. ve Gordon, P. (1996) "Mexico City," in *Mega-Cities in Latin America* , Ed. A. Gilbert, Tokyo: United Nations University Press.
- Terzi, F., Mutlu, H. ve Dökmeci, V.(2005) "Retail potential of districts of İstanbul," *Journal of Retail and Leisure Property* 3, 4, 314-325.
- Tokatlı, N. ve Boyacı, Y.(1999) "The changing morphology of commercial activity in İstanbul," *Cities* 16, 3, 181-193.

The green economy: a strategic approach to sustainable urban development in Caribbean Small Island Developing States (SIDS)

Martha Jillyan ARTHUR, The University of the West Indies, Trinidad and Tobago

Synopsis

Adopting a green economy approach in the Caribbean could provide a framework whereby decisions and strategies regarding cities and urban centres can promote resource efficiency, effective environmental management and a better standard of living for urban residents.

1. Introduction

Two major development issues currently facing Caribbean Small Island Developing States (SIDS) are the challenges associated with urban growth and the economic, environmental and social impacts of climate change related hazards. It is estimated that the Caribbean region is now 75% urbanised with variations in urban growth patterns across countries (Cohen 2004). Urban growth and development in Caribbean is often marred by growing informal settlements, urban sprawl, inefficient resource use and increasing demands on services such as water and sanitation. These urban issues are further exacerbated by climate change related threats such as sea level rise, increase intensity of storms and hurricanes. These associated hydrometeorological risks are detrimental to vulnerable coastal populations, since more than half the region's population live within 1.5km of the shoreline (Mimura et al. 2007). As a result it is critical that Caribbean policy makers address these development issues by identifying strategies that promote economically, socially and environmentally sustainable cities and urban centres.

The recently concluded Rio+20 United Nations Conference on Sustainable Development addressed the concept of the green economy as a mechanism for achieving the goals of sustainable development. The outcome document "The future we want" expressed the importance of utilising green economy initiatives as an important tool for achieving the overarching goal of sustainable development by means of informing policies that reconcile the economic, social and environmental dimensions of development. In this regard it was recognised that it is necessary to change unsustainable patterns of consumption and production and manage and protect natural resources while taking steps to alleviate poverty. It was also noted that countries can move towards a sustainable development path by addressing issues that are pertinent to their development needs. In the case of Caribbean SIDS, a green economy should adopt approaches that are in accordance with national development needs and priorities. Therefore this paper attempts to focus on the urban specificity of the green economy and to highlight the potential for achieving sustainable development goals through the greening of cities in the Caribbean.

The paper proposes strategies for greening the urban sector based on selected priorities from the Caribbean Urban Agenda in the area of natural hazard management and the cross cutting thematic areas of sustainability planning, climate change vulnerabilities. The paper discusses avenues for 'greening' the urban sector in the areas of water, waste and sanitation, transportation, urban form and the built environment and addresses the cross cutting issue of energy use and efficiency in the Caribbean. For the purpose of this discussion the 'urban sector' refers to the combination of essential service sectors that facilitate the efficient functioning of an urban area. This paper¹ is an abridged version of a discussion paper that was produced through an internship programme funded by the European Union (EU) under the EU MEAs project executed by the Caribbean Community (CARICOM) Secretariat. For the purpose of this paper the Caribbean refers to CARICOM member and associate member states.

The Caribbean Community (CARICOM) is an organisation of 15 Caribbean nations with member status and 5 Associate member states. Member states are Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. Associate members are Anguilla, Bermuda, British Virgin Islands, Cayman Islands and Turks and Caicos Islands. The Caribbean Community and Common Market (CARICOM) was established by the Treaty of Chaguaramas, which was signed by Barbados, Jamaica, Guyana and Trinidad & Tobago and came into effect on August 1, 1973. In 2001 Heads of Governments signed the Revised Treaty of Chaguaramas which transformed the Common Market to a CARICOM Single Market and Economy. CARICOM's objectives include improving standards of living and work; enhancing co-ordination of Member States' foreign and foreign economic policies and coordinated and sustained economic development.

Through the Council for Trade and Economic Development (COTED), Ministers designated by member states are responsible for promotion of trade and economic development of the Community. In particular COTED is responsible for i. promoting measures for the development of energy and natural resources on a sustainable basis; ii. establishing and promoting measures for the accelerated development of science and technology; iii. promoting and developing policies for the protection of and preservation of the environment and for sustainable development. It is at this regional level that specific Caribbean priorities can be addressed and advanced.

2. Caribbean Context

Myers et al (cited in ECLAC 2010) views the Caribbean as a biodiversity hot spot, meriting global priority for conservation purposes. This is attributable to the fact that Caribbean islands have less than 30% of primary vegetation remaining (11.3%) and more than 0.5% of the World's known vascular plant species (2.3%). The region is also home to 2.9% of the World's endemic vertebrate species. The Caribbean region mainly consists of island states, with the exceptions of Belize in Central America, and Guyana and Suriname, situated on the South American continent (UNEP 2008). Territories are surrounded by the Caribbean Sea and the Gulf of Mexico totalling a combined area of approximately 5 326 000 km² (UNEP 2008).



Figure 1: The Caribbean Region and CARICOM Member countries

Caribbean economies are highly resource dependent and are usually reliant on a single economic resource resulting in a lack of economic resilience. The tourism and agricultural industries is the mainstay of several Caribbean economies and the in case of

Trinidad and Tobago oil and gas is the key foreign exchange earner. According to 2012 World Travel and Tourism Council (WTTC) statistics, the economic contribution of tourism in the Caribbean was greater than all other regions in the world. Several Caribbean countries recorded above world average contributions to GDP from Travel and Tourism. The total contribution of travel and tourism to GDP in Antigua and Barbuda totalled 77.4%, The Bahamas (48.4%), Barbados (39.4%) and St. Lucia (39%). One exception is Trinidad and Tobago where the energy sector is the largest contributor to GDP, figures from the Central Bank of Trinidad and Tobago Annual economic survey show that the energy sector accounted for 43.7% of GDP and 54.3% of government revenue in 2012.

Some of the countries in the region are also among the most indebted. St. Kitts and Nevis and Jamaica are the top two indebted countries in the region where 21.94% and 17.2% of exported goods and services is used to service debt. (ECLAC 2013) Added to this, poverty and unemployment are high in some Caribbean countries. In 2010 St. Lucia recorded an unemployment rate of 20.6%, whereas in Barbados and Jamaica unemployment statistics was estimated at 10.4 % and 12.3% respectively. (ECLAC 2013) Urban development in the Caribbean is often dominated by challenges of urban sprawl, informal settlements, peri-urbanism and increasing demands on services such as water and sanitation. It is worth noting that the Caribbean has a unique urban growth pattern characterised by a "... discontinuous, scattered, low density form of urbanisation" (UN-HABITAT 2012). Caribbean cities are usually capital cities dominated by high levels of primacy and intense urbanisation along coastal strips (Jaffe 2008). Owing to this many capital cities in the Caribbean continue to be the primary hub of administrative and economic activity, resulting in a skewed concentration of labour, political systems and administrative services. Urban and rural boundaries are often blurred due to extensive sprawl and as a result urban areas may include small administrative areas where human settlements and economic activity are concentrated.

3.1 Caribbean Vulnerabilities

As SIDS, Caribbean countries' economic and environmental vulnerabilities are exacerbated by challenges associated with urban growth and climate change related hazards. Most Caribbean cities, settlements, critical infrastructure, economic and social activities are located along the coast.

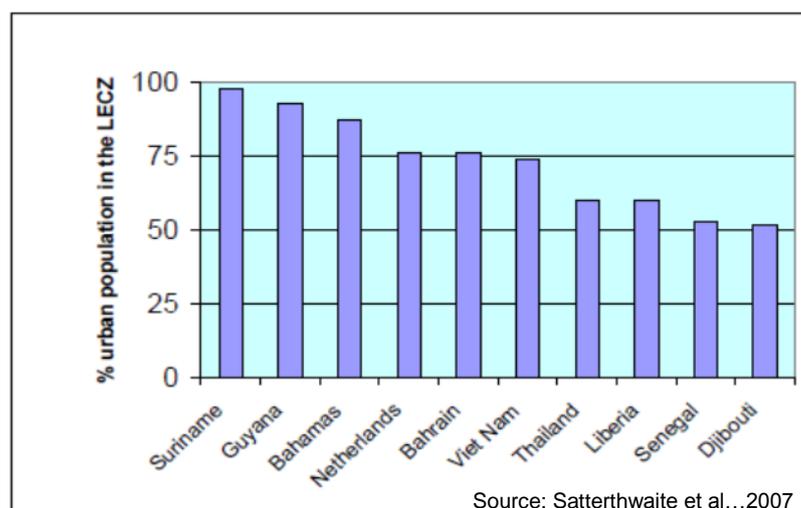


Figure 2: Nations with the highest urban populations in the Low Elevation Coastal Zone

Figure 2 show that three Caribbean territories possess the highest percentage of urban populations in the Low Elevation Coastal Zone. This increases vulnerabilities to climate change related threats such as sea level rise. Risks from extreme weather events that lead to storm surges can be detrimental to the Caribbean leading to inundation of

coastal cities and settlements, loss and damage to coastal infrastructure, flooding, loss of natural defences and aesthetic appeal due to beach erosion and loss of coral species. For instance in 1999, eight Eastern Caribbean states (Anguilla, Antigua and Barbuda, British Virgin Islands, Dominica, Grenada, Saint Lucia, St Vincent and the Grenadines and St Kitts and Nevis) reported estimated damages of EC \$712.5 million or US \$268.8 million due to Hurricane Lenny. Most of the damages reported related to coastal infrastructure, coastal communities and businesses (E. Nurse 2013 pers. comm. June 6th). In some instances losses from a single hydrometeorological event such as a hurricane can devastate an already under resourced Caribbean economy.

According to the World Bank the financial cost of damages to Grenada from Hurricane Ivan in Sept 2004 was estimated at more than US\$900 million, (more than double the country's GDP) (World Bank 2009). Similarly in 2010 St. Lucia recorded US\$334 million in damages due to Hurricane Tomas. Within a single year, economic losses due to the 2004 hurricane season cost Caribbean countries over US\$4 billion. The Intergovernmental Panel on Climate Change Fourth Assessment Report (IPCC-FAR) estimated that climate change is likely to heavily impact coral reefs, fisheries and other marine-based resources in the Caribbean. This increases the potential impacts on critical livelihoods such as subsistence and commercial agriculture. (IPCC 2007). The IPCC-FAR further states that the Caribbean region experienced "on average a mean relative sea level rise (SLR) of 1mm/ yr during the 20th century".(IPCC 2007). The Caribbean Sea has warmed by 1.5°C over the last century and data from the late 1950s to 2000 shows an increase in the number of very warm days and nights. Changes in rainfall patterns are also evident with an increase in the frequency of heavy rainfall events. (UNFCCC 2007)

Climate change impacts on key economic sectors in the region			
Issue or resource vulnerable to climate change	Potential effects of climate change	Sectors at greatest risk	Economic relevance
Freshwater availability	Reduced precipitation; increased evaporation Saline intrusion from SLR	Multi-sectoral	Insufficient supply to boost economic activity and for domestic purposes
Degradation of marine and coastal ecosystems	SLR and changes in sea temperature can affect important ecosystems such as mangroves, fishing grounds and coral reefs.	Tourism Agriculture Fisheries	Most tourism activities are located in the coastal zone. Significant capital investment assets and infrastructure could be affected.
Coastal flooding	Sea level rise will result in flooding of low-lying Coastal areas.	Tourism, Agriculture, Forestry	<i>Same as degradation of marine and coastal ecosystems</i>
Climate	Climate change may increase extreme events such as precipitation intensity, tropical storms and hurricanes	Multi-sectoral	The cost of hurricanes and other natural disasters in the Caribbean region, estimated at several hundred million dollars during the last decade, may increase.

Adapted from UNEP ROLAC, 2008.

Table 1: Climate change related impacts in the Caribbean

The climate related impacts outlined in Table 1 poses significant risk to livelihoods and already volatile economic sectors such as tourism and fisheries. Further to this, devastation from hurricane activity is also a recurring threat to many Caribbean islands, with some islands, suffering frequent damage e.g. The Bahamas, Cayman Islands and Cuba (Bueno et al. 2008). As a result environmental degradation and loss of livelihoods have

continued to hinder the region's progress towards achieving development goals. Since resources allocated for development initiatives are often diverted to finance recovery and reconstruction. (Trotz 2002, CDERA and CDB 2003, Howard 2009). In a business as usual scenario Bueno et al (2008) estimates that the cost of climate change in-action can reach 20.3%, 30.5% and 19% of current GDP by 2025 in Grenada, Haiti and Turks & Caicos respectively. This highlights the importance of implementing strategies to address these challenges.

3.2 The Regional Response to Climate Change

<p>Caribbean Planning for Adaptation to Climate Change Project (CPACC) 1997-2001</p> <p>Institution involved: Implemented by The World Bank, executed by the OAS and overseen by CARICOM.</p> <p>Goal: To build capacity in the Caribbean region for the adaptation to climate change impacts, particularly sea level rise.</p> <p>Activities: vulnerability assessments, adaptation planning, and capacity building activities.</p> <p>Main Achievements: Establishment of coral reef monitoring protocols; Establishment of a sea level and climate monitoring system; Improved access and availability of climate change related data.</p>	<p>The Adaptation to Climate Change in the Caribbean Project (ACCC) 2001-2004</p> <p>Institutions involved: funded by the Canadian Climate Change Development Fund of CIDA, overseen by the World Bank, supported CARICOM</p> <p>Goal: To continue activities initiated under CPACC and to address issues of adaptation and capacity building not undertaken by CPACC.</p> <p>Activities: Public education and outreach Project design and implementation of a business plan for a regional climate change centre; technical capacity, strategies for food, agriculture and water sectors; integration of adaptation planning in development projects.</p> <p>Main Achievements: Development and distribution of risk management guidelines; A draft regional public education and outreach strategy; Implementation of pilot projects on adaptation studies in the water health and agricultural sectors.</p>
<p>Mainstreaming Adaptation to Climate Change Project (MACC) 2004- 2007</p> <p>Institution involved: Implemented by The World Bank, funded by GEF, executed by CARICOM.</p> <p>Goal: Mainstream climate change adaptation strategies into the sustainable development agendas of the Small Island and low-lying states of CARICOM.</p> <p>Activities: Furthering institutional capacity building, strengthening the knowledge base, and deepening awareness and participation.</p> <p>Main Achievements: Integrating climate change adaptation into national & sectoral policies; Strong public education & outreach</p>	<p>Special Programme on Adaptation to Climate Change (SPACC) Project 2007 – 2011</p> <p>Institution involved: Implemented by the World Bank Funded by GEF, executed by the CCCCC</p> <p>Goal: To support, St. Lucia, Dominica & St. Vincent and the Grenadines to implement specific (integrated) pilot adaptation measures to address the impacts of climate change on natural resources, biodiversity & land degradation along coastal areas.</p> <p>Activities: Design of measures to reduce the adverse impact of climate change on the marine & terrestrial environment.</p> <p>Main Achievements: To be evaluated</p>
<p>Source: UNEP 2008; Howard 2009; CARICOM Secretariat 2012;</p>	

Table 2: Regional Climate Change related projects

Cruickshank et al. (2012) notes that despite numerous 'institutions, instruments and processes' addressing sustainable development practices, environmental problems continue to increase and have intensified globally. It is argued that since the region's contribution to global warming is insignificant and there is clear evidence of the consequences for Caribbean SIDS, focus should be placed on adaptation strategies that build resilience in these territories. Regionally, CARICOM have been advancing development initiatives in member states that are geared towards adaptation and capacity building. Several projects sought to further these objectives i.e. The Caribbean Planning for Adaptation to Climate Change project (CPACC) 1997-2001, The Adaptation to Climate Change in the Caribbean Project (ACCC) 2001 to 2004, the Mainstreaming Adaptation to Climate Change project (MACC) 2004- 2007. Table 3 highlights the projects' activities and achievements. These projects eventually led to the establishment of the Caribbean Community Climate Change Centre (CCCC).

The Caribbean Community Climate Change Centre (CCCC) was endorsed in July 2002 and became fully functional in July 2005. The Centre is registered under the UN System as a CARICOM Specialised Agency with a mission to "*coordinate the regional response to climate change and its efforts to manage and adapt to its projected impacts*". The Centre is recognised by the UNFCCC, the United Nations Environment Programme (UNEP), and other international agencies as the focal point for climate change issues in the Caribbean (CCCC 2011). The CCCC further provides climate change related policy support and capacity building to manage climate risks related vulnerabilities in CARICOM member countries. In 2009, CARICOM Heads of Government highlighted the regions' commitment to strengthening the response to climate change adaptation by approving "The Regional framework for achieving development resilient to climate change".

The framework provides a plan of action for achieving the goals outlined over the period 2009-2015. An implementation plan was later adopted which places primary responsibility for coordinating the implementation of the key strategic elements of the framework with the CCCC. The main strategic elements of the framework are as follows:

- I. Mainstreaming climate change adaptation strategies into the sustainable development agendas of CARICOM states.
- II. Promote the implementation of specific adaptation measures to address key vulnerabilities in the CARICOM region.
- III. Promote actions to reduce greenhouse gas emissions through energy efficiency, conservation, and switching to renewable energy sources.
- IV. Encouraging action to reduce the vulnerability of natural and human systems in CARICOM countries to the impacts of a changing climate.
- V. Promoting action to derive social, economic, and environmental benefits through the prudent management of standing forests in CARICOM countries (CCCC 2009).

3. Caribbean Urban Agenda

Current literature on urbanisation highlights the city as providing opportunities to collectively address developmental challenges. From a regional perspective well managed cities and urban areas can address challenges such as environmental degradation, resource depletion, vulnerability to the effects of climate change and increasing demands on urban infrastructure due to urban growth and sprawl. Well-designed urban areas with large population concentrations and dense urban settlements can present opportunities for efficient provision of adequate services such as water and electricity. In the Caribbean context, this can place the most vulnerable urban dwellers (people living along the coast and hazard prone areas) at the centre of shifts towards sustainable urban management.

It is argued that a region specific urban agenda should be advanced to address the unique challenges of the Caribbean and to deal with specific urban challenges. There are several global initiatives implemented in Caribbean cities that focused on urban issues albeit from an international standpoint. Some projects that addressed urban issues were the Urban Management Program (Port of Spain, Trinidad), Local Agenda 21 and Sustainable cities programme (Bayamo City, Cuba), the Safer City Program (Kingston, Jamaica) and

Participatory Slum Upgrading Program (Jamaica, Antigua and Barbuda, Trinidad and Tobago and Haiti). More recently the IDB Emerging and Sustainable Cities Initiative (Port of Spain, Trinidad and Tobago and Montego Bay, Jamaica) However; global urban agendas do not sufficiently address the inherent vulnerabilities of cities in the Caribbean.

4.1 CARICOM Policy Framework

Although CARICOM does not have a specific focus on urban issues, specific priority areas such as climate change, renewable energy, safety and crime, and economic vulnerability can be seen as cross cutting urban relevant priorities. Adopting an urban focus to development can promote and advance a Caribbean agenda that deals with sustainable energy, natural resource use and protection and preservation of the environment. In April 2011 the first annual policy meeting for the *Network for the Application of Science and Technology to the Urban Sector (NSUS)* projectⁱⁱ was convened in Guyana. The meeting was focused on “reassessing strategic priorities related to urban and land management in the Caribbean...”ⁱⁱⁱ This represented the first Caribbean Urban Forum which recommended the development of a Caribbean Urban Agenda (CUA) to address urban issues that were of a more Caribbean nature. The meeting recommended that a “holistic and comprehensive framework” be developed that includes high and low thematic priority programmes, a research agenda, a knowledge management facility and capacity building.

Priorities for a Caribbean Urban Agenda (CUA) 2012		
	Thematic Areas	Issues
Climate change vulnerability to: LECZ, Adaptation at local community level Sustainable planning urban form (compact), holistic, Comprehensive Coastal zone settlements planning land management/use, rural/urban integrated planning	Local economic development and poverty eradication	Unemployment Strengthening diversified local opportunities for economic development, provision of housing and basic services
	Enabling mechanisms for government and professional Governance	Research, communication, training, education, financing etc. implementation, communication and legislation, municipal governance, awareness component, co-governance inclusive governance, partnerships, coordination
	Informal sector	tenure security, informal settlements, informal economy
	Natural hazards and disaster management	climate change, built environment resilience, response capacity
	Physical human security	Crime, safety, freedom from fear
	Physical Living Conditions	housing, basic services (water, sanitation, energy use, transportation etc.)
	Inequality	social, economic inequality based on gender, age
	Climate Change contribution to:	energy, emission, transportation, green economy

Table 3: Priorities for a Caribbean Urban Agenda

As a result of the NSUS project the urban sector is now being addressed at the regional level. Subsequently at the Thirty- Seventh Special Meeting of the Council for Trade and Economic Development (COTED) in September 2011, the papers “Development of a Caribbean urban agenda in the context of sustainable development”^{iv} and “Urban Development and the Green Economy”^v was presented by the Caribbean Network for Urban and Land Management (CNULM) and the CARICOM Secretariat. The papers made a case for the adoption of green initiatives in key priorities areas and suggested a revision of the proposed CUA to include the cross cutting issues of climate change vulnerability and

sustainability planning. Arising out of the meeting it was agreed that the Caribbean region should determine its own understanding of the green economy and show how these initiatives can be translated into a regional context. It was also recognised that the urban sector can be a key driver of green economy initiatives

The CUA was again discussed at the Caribbean Urban Forum held in March 2012 and at the Thirty-Ninth Special Meeting of the COTED in April 2012 in a paper entitled "*The role of cities in the green economy*"^{vi}. The CUA currently comprises 11 thematic areas of region specific importance, that include the cross cutting issues of climate change and sustainable planning. See Table 3. The adoption of a CUA can now adequately inform policy at a regional level and provide urban specific inputs for policies currently in draft form (i.e. regional energy policy, climate change and implementation strategy policy and the tourism policy)

4. The Green Economy in the Caribbean

The most widely used and recognised definition of the green economy was posited by the UNEP, which states that a "...*green economy is one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities...*" In this regard the concept of green economy and sustainable development is somewhat linked since both ideas embody the principles of integrating economic growth with environmental protection and social improvement. This reinforces the notion that "a green economy can be an enabling component of the overarching goals of sustainable development" (UNCTAD 2011). The recent Rio+20 conference suggests that a green economy should provide a roadmap to achieving development goals and objectives. In this regard the concept is viewed as a framework that enables decision making in key priority areas such as resource efficiency, sustainable cities, sustainable consumption and production patterns, and low-carbon development.

It is important to note that a green economy should not be considered as a wholesale set of rules to be adopted, but a framework whereby countries can address specific development needs and priorities. The Caribbean stands to benefit from adopting green economy initiatives with respect to achieving overarching sustainable development goals. Specific to the Caribbean region green economy initiatives should:

- I. Provide effective environmental management- the Green economy can enable the transition to low carbon sustainable urban development in the Caribbean, which efficiently protects vulnerable ecological resources;
- II. Build economic resilience to promote self-sufficiency through greening of key economic sectors such as fisheries, tourism and agriculture;
- III. Mitigate and adapt to climate change induced hazards such as sea level rise, inundation of coastal cities and settlements, loss and damage to coastal infrastructure such as roads bridges airports; flooding, loss of natural defences and aesthetic appeal due to beach erosion and loss of coral species;
- IV. Job creation and poverty reduction can be addressed through investments in key sectors that promote low carbon development such as transportation;
- V. Provide avenues for promoting sustainable built form since well-designed urban areas and compact urban form can provide opportunities for more efficient urban infrastructure and service delivery.

In that regard, a green urban economy provides a framework to promote low carbon resource efficient cities, which provide a better quality of life for urban residents through growth and investment in key urban sectors such as transportation and infrastructure.

5. Strategies for greening the Urban Sector in the Caribbean

Energy use and efficiency-The global energy debate is inextricably linked to reducing greenhouse gas emissions (GHGs) and mitigating climate change. The UNFCCC recognises that while there is an inherent need for energy consumption to grow along with economic and social development, there is a possibility to be energy efficient and control

GHG emissions. Within urban areas the use of energy is a cross cutting issue, from managing fossil fuel dependent transportation sectors to efficiently managing urban spaces and resource consumption in buildings. The urban environment presents a great opportunity to utilise non-renewable energy resources more efficiently while promoting the use of alternative energy sources such as solar power. Although Caribbean territories are in an advantageous position to harness renewable energy, there is still a heavy reliance on fossil fuels to meet energy demands.

For instance Jamaica's petroleum product imports for the period January to August 2012 totalled US\$1.6 billion; US\$500 million more than the country's exports for the same period^{vii}. According to the draft Jamaica National Renewable Energy Policy 2009-2030, the nation is characterized by an almost complete dependence on imported petroleum and high rates of energy consumption. It was estimated that 87% of Jamaica's foreign exchange revenue is used to buy imported oil. This is attributed mainly to the transport sector that accounted for 37% of petroleum consumption in 2008. Similarly, through the development of a Sustainable Energy framework^{viii} Barbados is taking steps to promote renewable energy and energy efficiency in a bid to reduce the country's heavy dependence on imported fossil fuels and to improve the environmental sustainability of the country. The region's high dependence on imported fossil fuels, rising fuels prices and projected increase GHG emissions solidifies the need to work towards developing renewable and cleaner energy sources. The following sections highlights strategies to promote low carbon transportation, manage basic urban services and promote resource efficiency in the built environment

Water- Ecosystem management and restoration are an intrinsic component of transitioning to a green economy especially in the Caribbean. Efficient water management is critical to the very livelihoods of many Caribbean countries that are heavily dependent on the resource for key economies such as agriculture, industry and tourism. Inefficient management often results in losses and irregular supplies in some areas. For instance although Trinidad and Tobago is not considered a water scarce country; it is plagued by an irregular water supply in some areas. According to the Trinidad and Tobago, Ministry of Planning and the Economy (2012) water use statistics reflect a staggering 40% of demand is unaccounted for, highlighting the pressing need to manage water resources more efficiently.

In response to the Regional framework for achieving development resilient to climate change, the Global Water Partnership-Caribbean (GWP-C) was identified as a key partner in working for water security in the region. Through the Water, Climate and Development Programme and the promotion of an Integrated Water Resources Management (IWRM) approach the GWP-C is making strides in promoting water security and climate resilience. Countries such as Barbados, Dominica, Grenada, Jamaica, The Bahamas and Trinidad and Tobago; have developed or drafted IWRM roadmaps and action plans to ensure better resource management. Therefore greening the water sector within the Caribbean calls for the protection of groundwater and surface water resources through policy reform and regulatory frameworks, efficient watershed management, through effective land use planning (as in the case of Barbados strict zoning policy), urban growth boundaries, investments in adequate infrastructure, appropriate pricing mechanisms, public education.

Waste and sanitation- It is argued that solid waste such as garbage and chemicals from domestic use are often associated with growing affluence and are generated in tandem with population size and urbanisation. One of the primary dangers of ineffective waste management is human exposure to hazardous substances through contaminated drinking water (where contaminants are often leached into surface and groundwater). Waste in the form of pesticides can also contaminate food both inland and as effluent in coastal waters. According to UNEP (2011) solid waste services consume up to 2% of GDP in developing countries. Coupled with this, UN-HABITAT (2012) estimates that emissions from waste represent 3% of total global GHG emissions.

Waste management has become a critical component of thriving cities and thus human well-being hinges on solid waste management and pollution control. Waste generated

by human activity, agricultural and industrial processes can negatively impact ecosystems. Added to threats to human health, environmental degradation and loss of biodiversity can further result in economic losses which can affect important sectors such as fisheries and tourism. Another area of concern is methane emissions from landfills that contribute to overall GHGs. The key strategy for greening the waste sector is to reduce the amount of waste going into landfills. Satterthwaite (2002) argues that cities have the advantage of reducing resource use and waste due to the mere concentration of large groups in close proximity. In this regard, encouraging re-use and recycling presents an avenue for progression towards decoupling waste generation from increased economic growth in the region. However, Greening the waste sector requires a strong regulatory framework and incentives must be present in order to ensure buy-in by all stakeholders.

Transportation- The Latin America and the Caribbean (LAC) region possesses the highest level of motorisation in the developing world. The region has twice as many cars as the Middle East and North Africa and five times more cars than Sub-Saharan Africa and Asia. UN-HABITAT (2012). Continued car oriented development and infrastructure planning and low cost/subsidised fuel may be attributable to the growth of the private car market. In Trinidad and Tobago, the Ministry of Planning and the Economy (2012) estimated that there were 630,000 vehicles in the country, with a projected increase of 30,000 annually. Likewise the Barbados Licensing Authority showed that in 2009 the total vehicle stock on the island was 131,680, suggesting one vehicle for every two persons on the island (UNEP, UWI and The Government of Barbados 2012). Along with private vehicle ownership comes an increase in GHG emissions namely CO₂. The IPCC (2007) estimates that the global transport sector accounted for 13% of total GHG emissions. The IEA 2012 Statistics show that Jamaica and Trinidad and Tobago are the highest emitters of CO₂ among CARICOM members. IEA estimates that from fuel combustion Jamaica emits 8.0 million tonnes of CO₂ (2.8 million tonnes from the transport sector) while Trinidad produces 42.8 million tonnes CO₂ (3.1 million tonnes from the transport sector). Therefore, any greening strategy for the transportation sector in the Caribbean should be geared towards adopting sustainable transport solutions which combine a mix of multi-modal mobility options; complementary land use practices and a strict regulatory framework.

Central to the concept of sustainable low carbon transportation sector is the Avoid-Shift-Improve strategy. The Avoid-Shift-Improve strategy not only attempts to provide environmentally conscious low carbon mobility options but the concept also addresses social and economic sustainability (Dalkmann and Brannigan 2007). The strategy hinges on

- i. **Avoiding** or reducing the need to travel, through more integrated land use planning i.e. creating high density, mixed use developments and integrating transport options along key nodes of activity;
- ii. **Shifting** to more environmentally conscious modes of transportation; refers to the option of alternative low carbon transportation modes, for instance shifting from using private cars towards non-motorised options such as walking and cycling or mass transit;
- iii. **Improving** the energy efficiency of private motor vehicles and in some cases public transport which in turn has a direct effect on the amount of CO₂ emissions. Strategies can include introduction of electric and hybrid vehicles into the Caribbean market. Substituting fossil fuel for cleaner Compressed Natural Gas as in the case of Trinidad.

Urban form and the built environment- Density and compact urban form is a critical component of managing energy consumption (UN-HABITAT 2011). Tackling CO₂ emissions must be collectively addressed by combining effective transport management strategies with utilising energy alternatives and applying the principles of compact urban

form. According to UNEP (2011), dense cities that employ mixed uses are more resource efficient than other settlement patterns. Compact urban form presents an avenue to achieve resource efficiency in the utilisation and management of urban land. This in turn results in less reliance on motorised modes of transport, lower energy consumption and better access to services in cities. Unlike the characteristic low density outward expansion of several Caribbean cities, compact urban form can be realised through adopting smart growth principles that mitigate sprawl and encourage walking, cycling and transit oriented development by

- i. Urban growth boundaries- An officially mapped boundary that is used to separate open space and sensitive watersheds;
- ii. Land use regulation- Zoning can ensure that focus is placed on developing brownfield sites versus greenfield;
- iii. Increasing density- Setting clear density standards for new development projects especially in areas close to transit;
- iv. Infill development- Focusing on developing and regenerating underutilised or derelict sites;
- v. Mixed used developments- Provide a mix of residential, commercial and recreational options where people can live, work and play in one place
- vi. Design standards- establishing strict building codes and standards can translate into increased energy efficiency of buildings and multiple use of urban space (parks, green roofs etc.)
- vii. Street layout and design- urban design standards that promote the use of non-motorised transport such as tree lined streets, walking and jogging paths, building setbacks can encourage alternative modes of transport.

So far this paper has highlighted the benefits of implementing a green economy in the Caribbean. While there is a strong case for this transition, certain factors can hinder the uptake of green economy initiatives. Some of these include:

- i. uncoordinated governance that does not provide an integrated framework for the effective management of green initiatives;
- ii. negative consumer attitudes towards alternative green strategies, such as high density living and alternative modes of transport;
- iii. vested business interest in current unsustainable consumption and production patterns;
- iv. lack of investment by the public and private sectors and
- v. lack of cost effectiveness/ affordability of green products.

6. Recommendations

Policy, regulatory and Institutional framework- the transition toward a green urban economy should be facilitated by a strong regulatory and institutional framework. The proposed Caribbean Urban Agenda can be a good starting point to inform policy on areas that are of critical importance to the Caribbean i.e. energy and climate change. This offers policy makers a framework for streamlining development action to address the common vulnerabilities in the region.

Development strategies- Planning regulations and standards make up a critical component of sustainable urban development planning. Without strict enforcement of planning standards and regulations, efforts to green the environment and change behaviour would be short lived. Key policy instruments can focus on land use regulations that promote infill development and limit the amount of new or greenfield development within urban areas. Promoting high densities, compact urban form and mixed use development is an efficient policy strategy that affords some of the benefits discussed in this paper. Additional building standards and codes can also allow government to ensure best practices in the construction sector by promoting energy efficient certification.

Capacity building and Training- Capacity building and training (including Science Technology and Innovation STI) is critical for the effective deployment of green economy initiatives. Many ideas and best practices can be shared across countries and regions. However, new technologies and best practices used elsewhere require capacity building and re-tooling of locals to ensure a green transition in certain sectors. This would in turn ensure 'green jobs' are created and a market that is supported by innovative green enterprise is facilitated.

Stimulate green investment in technology- There is a central role of technology in the transition to a green economy. Hence government policies should encourage investment in green technologies. For instance technology in landfill gas capture is not highly developed in the Caribbean therefore training and capacity building is needed in this priority area. This can encourage buy-in by the private sector since investment in 'greening' certain sector (which holds high upfront cost) can be justified in the long term.

Fiscal incentives, disincentives and market mechanism- The importance of public and private investment as an enabling condition for the green economy is also critical. For a green economy to work it is imperative that fiscal incentives are tied in with other policy directives. The creation of markets for green products can also stimulate demand and further investment in green technologies.

7. Conclusion

It is now imperative that Caribbean SIDS adopt a framework for development that is driven by social equity, environmental sustainability and inclusive economic growth. It is important to highlight that cities and urban areas in the Caribbean are now facing an urban future marked by increased demands on essential services such as transportation, water, waste and sanitation. Coupled with these urban challenges is the issue of the upward trajectory of climate change related hazards, due in large part to anthropogenic factors.

A business as usual scenario presents a worrying picture for Caribbean SIDS if strides are not made to mainstream sustainability strategies into development planning. Though the region's contribution to climate change may be considerably less than developed countries, there is still a responsibility to lessen the deleterious activities that contribute to overall GHG emissions. A main point of contention is the region's heavy reliance on imported fossil fuels and the ever expanding private car market. Additionally, inefficient resource consumption and lack of energy efficient built form is also adding to the region's contribution to global climate change. To deal with these issues Caribbean governments would have to adopt approaches that effectively use urban planning and resource management approaches as means to achieving sustainable cities and building resilient economies.

A green economy approach provides a framework whereby decisions and strategies regarding cities and urban centres can promote resource efficiency, effective environmental management and a better standard of living for urban residents. Ultimately building economically resilient, well managed socially inclusive Caribbean societies. Although these opportunities can be realised, uncoordinated governance, vested business interest in unsustainable practices and negative consumer attitudes can hinder the shift to a green economy. Added to this, capacity building, effective regulatory instruments and financing options are needed to advance the transition in the Caribbean. While Caribbean regions have demonstrated their willingness to implement sustainability strategies, progress have been uneven. Therefore employing green economy strategies can provide a pathway to sustainable urban development in Caribbean cities.

Endnotes

ⁱ The research that informed the preparation of this paper was supported by the Caribbean Community (CARICOM) Secretariat, under a joint EU-UNEP-CARICOM project, with the financial assistance of the European Union. The views expressed herein can therefore in no way be taken to reflect the official opinion of the CARICOM Secretariat, the European Commission or the United Nations Environment Programme.

-
- ii <http://bluespacecaribbean.com/projects-main/nsus/>
iii <http://bluespacecaribbean.com/wp-content/uploads/2012/07/Technical-paper-A-Caribbean-Urban-Agenda-2011-FINAL.pdf>
iv <http://bluespacecaribbean.com/wp-content/uploads/2012/07/COTED-2011-Development-of-a-Caribbean-Urban-Agenda-in-the-Context-of-Sustainable-Development.pdf>
v <http://bluespacecaribbean.com/wp-content/uploads/2012/07/COTED-2011-Urban-Development-the-Green-Economy.pdf>
vi <http://bluespacecaribbean.com/wp-content/uploads/2012/07/COTED-2012-The-Role-of-Cities-in-the-Green-Economy-FINAL.pdf>
vii <http://jamaica-gleaner.com/gleaner/20121216/lead/lead2.html>
viii <http://jamaica-gleaner.com/gleaner/20121216/lead/lead2.html>

References

- Bueno, Ramón, Cornelia Herzfeld, Elizabeth A Stanton, and Frank Ackerman. 2008. The Caribbean and Climate Change; the cost of inaction." <http://ase.tufts.edu/gdae/CaribbeanClimate.html> (accessed December 2, 2012).
- Caribbean Community Climate Change Centre 2009. Climate Change and the Caribbean: A Regional Framework for Achieving Development Resilient to Climate Change (2009-2015). Belmopan, Belize: CCCCC.
- Caribbean Community Secretariat (CARICOM). 2012. Adaptation to climate change in the Caribbean (ACCC) project. Accessed December 17, 2012 <http://www.caricom.org/jsp/projects/macc%20project/accc.jsp>
- Cohen, Barney. 2004. Urban Growth in Developing Countries: A Review of Current Trends and a Caution Regarding Existing Forecasts. World Development Vol. 32, No. 1, pp. 23–51, 2004.
- Cruikshank, Emlyn, Kirsty Schneeberger and Nadine Smith. 2012. A pocket guide to sustainable development governance. Commonwealth Secretariat.
- Dalkmann, Holger, and Charlotte Brannigan. 2007. Module 5e. Sustainable transport: a sourcebook for policy makers in developing countries. GTZ.
- ECLAC. 2010. An assessment of global economic models for climate change.
_____ 2013. Economic Survey of the Caribbean 2011-2012: Positive growth amidst lingering downside risks.
- Howard, Dellarue. 2009. Climate Change and Disaster Risk Reduction in Caribbean Small Island Developing States. Submitted to the 45th International Society of City and Regional Planners (ISOCARP) Congress.
- Intergovernmental Panel on Climate Change (IPCC) 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 976pp.
- Jaffe, Rivke. 2008. The Caribbean City. Kingston; Miami: Ian Randle.
- Model national hazard mitigation policy for the Caribbean, 2003. The Caribbean Disaster Emergency Response agency (CDERA) and The Caribbean development bank (CDB). Retrieved 12th May 2013. <http://www.caribank.org/wp-content/uploads/2012/03/Model-HM-Policy-April-26-2004.pdf>
- Mimura, N., L. Nurse, R.F. McLean, J. Agard, L. Briguglio, P. Lefale, R. Payet and G. Sem. 2007. Small islands. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 687-716. (Accessed April 23, 2013)

- Satterthwaite, David. 2002a. "Urbanization and environment in the Third World." In *The companion to development studies*, by Vandana Desai and Robert Potter, 262-268. London: Arnold.
- Satterthwaite, David, Saleemul Huq, Mark Pelling, Hannah Reid and Patricia Romero Lankao 2007, *Adapting to Climate Change in Urban Areas; the possibilities and constraints in low- and middle-income nations*. London: IIED.
- Trotz , Ulric O'D. 2002. *Disaster Reduction and Adaptation to Climate Change – A CARICOM Experience*. Paper presented to the UNDP Expert Group Meeting "Integrating Disaster Reduction and Adaptation to Climate Change" Havana, Cuba, June 17-19, 2002. Belize: Caribbean Community Climate Change Centre
- United Nations Conference on Trade and Development (UNCTAD). 2011. *The Road to Rio+20: For a development led green economy*. New York: United Nations
- United Nation Environment Programme, 2008. *Climate Change in the Caribbean and the Challenge of Adaptation*. UNEP Regional Office for Latin America and the Caribbean, Panama City, Panama.
- _____, The University of the West Indies and The Government of Barbados. 2012. *Green Economy: Scoping Study Synthesis Report Barbados*. Christchurch, Barbados.
- UNFCCC, 2007. "Vulnerability and adaptation to climate change in small Island Developing State". Background paper for the UNFCCC Expert Meeting on Adaptation for Small Island Developing States (SIDS) Part I -Caribbean and Atlantic Ocean SIDS, Jamaica, February 2007
- UN-HABITAT. 2012a. *State of the world's cities report 2012/2013: Prosperity of cities*. Nairobi: United Nations Human Settlements Programme.
- World Bank 2009. Grenada: *Dealing with the Aftermath of Hurricane Ivan*. Viewed December 15, 2012, <http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:22324886~pagePK:34370~piPK:34424~theSitePK:4607,00.html>

The Trilogy of Power, Politics and Planning

Eda Beyazit, Istanbul Technical University, Turkey

1. Introduction

Power and politics are deeply embedded in planning. The idea of controlling cities and nations via planning is as old as the city-states. According to Foucault (1976) every political debate in the eighteenth century onwards included discussions on urbanism, architecture and facilities of common life. Yet, it is not only through planning or infrastructure that power becomes tangible but also through a range of political techniques (Castells, 1997). Therefore, instead of speaking of the influence of power and politics in planning, it is important to refer to the mutual relationship between these three notions, thus, discuss the trilogy of power, politics and planning.

In this paper, such an approach to power, politics and planning is used in order to understand socio-spatial inequalities. Although empirical examples that assess the relationship between these notions can be found in the literature, their use in understanding of socio-spatial inequalities is not very common. Having stated the mutuality of these notions, in this paper power is also acknowledged as a plural term, and power of politics, planning and economy are taken as important determinants of socio-spatial inequalities. For instance, according to Harvey (2006) the clash of different powers, e.g. economic and political, generates uneven geographic development. In this sense, socio-spatial inequalities are explored through the relationship of these powers and the paper is grounded within the urban land rent theory, theories of uneven geographies, geometries of power as well as discussions on participatory planning and right to the city. Planning process and infrastructure development in Istanbul are used in order to explain socio-spatial inequalities.

In Istanbul, plan amendment process has become a major issue especially within the last decade. The Municipal Council of the Istanbul Metropolitan Municipality makes decisions on the future of the development of the city in limited time, with limited participation and regardless of the approved Urban Master Plan decisions. In this sense, the municipality (re)distributes the wealth and urban rent and yet, no regular scheme is applied for the participation of different interest groups to this process. Therefore, tension between different interest groups has climbed in recent years. For instance, professional chambers such as the chamber of urban planners and chamber of architects have sued the municipality on a number of occasions. Recently, public will to protect an urban park (Gezi Park) in its current form against government's plans of demolishing it and resurrecting old army barracks to be used as a shopping mall/hotel complex, has triggered a country-wide resistance. Government's intervention to public space at different scale and forms has become a general practice especially within the last ten years and a way to generate economic surplus. In this paper these interventions are discussed with regard to urban transformation and socio-spatial inequalities attached to this process.

The first section of this paper analyses the plan amendment process in Istanbul. Having acknowledged that the Istanbul Municipal Council approves more than a thousand plan amendments a year (personal interview, Representative of Chamber of Urban Planners 2011), the scope of this research has been limited to a defined area, that is the surroundings of the Istanbul Metro (subway). In doing so, it has been possible to assess the impacts of an important transport infrastructure in the city. In the second section of the paper, one of the emerging terms related to socio-spatial inequalities generated by transport infrastructures, the accumulation of physical capital, is examined with regard to the Istanbul Metro. This

paper uses a series of qualitative data, i.e. expert interviews, newspaper articles and adverts and analyses them with reference to political agency and structure of socio-spatial processes. This method is based on Jager's (2003) analysis of the urban land rent.

2. Conflicts: Adopting the plan or adapting it

Urban land rent theory as well as the notion of commodity, its use and exchange values, is based on a Marxist analysis of economy and economic relationships and draws mainly on Marx's explanation of the agricultural production in the third volume of the *Capital* (Marx, 1990). David Harvey has largely used Marxist land rent theory in order to explain the urban phenomena like socio-spatial inequalities in his early writings in *Social Justice and the City* (1973) as well as in his later work in order to understand the recent economic crises which he believes to have generated in urban areas due to excessive capital accumulation (Harvey, 2006; 2012; Soja, 2010). According to Harvey, use of land, the regulation on land, thus land rent, is a necessary condition for capitalism (Harvey, 1990) which has also been discussed by many others in terms of the production of space (Lefebvre, 1976; Castells, 1996; Soja, 2010).

Improvements on land such as improved infrastructure, increased accessibility and additional construction rights create urban land rent. If we need to specify the form of this rent, it can be described as Differential Rent II (DRII) (Marx, 1990). The Istanbul Metro creates DR II not only directly, based on increased property prices, diversified business sectors and increased CBD activities around the stations as discussed in a previous study (Beyazit, 2013), but also indirectly, as the Metro is used as an additional tool to increase the attractiveness of building blocks and single plots. Planning decisions given by the Istanbul Municipal Council are important determinants of this process and are evaluated in this section. Three examples of residential and commercial buildings are used to explain this process.

After the opening of the Istanbul Metro in September 2000, surroundings of its stations have become attractive areas for investment. Although a number of shopping malls opened within close proximity to the Büyükdere axis regardless of the Metro connection before the Metro was built, some investments have been made considering this advantage (Figure 1). Metrocity, a shopping mall, office and residence complex comprised of three buildings with 24-26 floors, opened in 2003 at the Levent Metro station. Later on in 2005, Cevahir Shopping Mall, the biggest shopping mall in Europe and the second biggest in the world (in 2007) opened at the Şişli/Mecidiyeköy station. In 2006, Istanbul gained an extraordinary building structured like a canyon, comprised of four floors of shopping mall and separate buildings for offices and flats. Kanyon combined the features of street-shopping and shopping in a mall with its peculiar design (Kanyon AVM, 2011). All three buildings have direct access to the Metro stations and passengers can access the shopping malls without going over ground.

In a personal interview with a real estate developer (2011) it has been mentioned that investors see the metro link to the shopping malls as an advantage, likewise, customers prefer shopping malls with connection to the Metro. Therefore, it is possible to state that the Metro creates additional urban rent by offering direct access to and from the shopping malls. Recent developments such as the Diamond of Istanbul, Dubai Towers, Trump Towers, Zorlu Center and other residential and office buildings are shown in Figure 1. These projects have been subject to legal actions as a result of the ways in which they were authorised by the Municipal Council despite not being a part of the local development plans. As a result of exclusive construction rights given to these plots, values increase and the economic gain for the investors of these buildings becomes larger compared to the other investors in the area. Therefore, inequalities occur. Following paragraphs discuss the structure of the process of the generation of differential rent and agencies involved in this process.



Figure 1 Stars point out the residential and commercial developments that the Chamber of Urban Planners has appealed to the Administrative Court about. Numbers mark the shopping malls/residential and office complexes that have direct connections to the Metro stations. 1: Cevahir Shopping Mall; 2: Astoria; 3: Metrocity; 4: Kanyon

Having stated the importance of the connection to the Istanbul Metro for developers, it is crucial to assess this issue from the stand point of decision-makers. Even though the planning process in Istanbul follows a formal path that consists of various stages of urban planning, the final products, i.e. the master plans, are diverted from their aims and objectives due to interventions from national and local authorities. Therefore, the knowledge produced and shared by academics, planners, decision-makers and other stake-holders in the process of preparing master plans is disregarded in order to implement new decisions via plan

amendments, changed construction rights and new urban design projects¹. This section analyses the plan amendment process in order to define the *structure* and the *actors* taking part in the generation of the differential rent based on Jager's (2003) analysis of the urban land rent.

In a personal interview with one of the members of the Municipal Assembly (also a member of the opposition party) the plan amendment process has been discussed. Based on the interview, it can be stated that this process is very straightforward and includes eight steps from the proposal to the consultation and approval of the project (Figure 2). However, when this process is evaluated in depth, it is far more complicated and involves various actors especially in cases where a decision on an individual plot may have effects at a larger scale such as in the construction of shopping malls and office buildings that affect transport, density and economic gain.

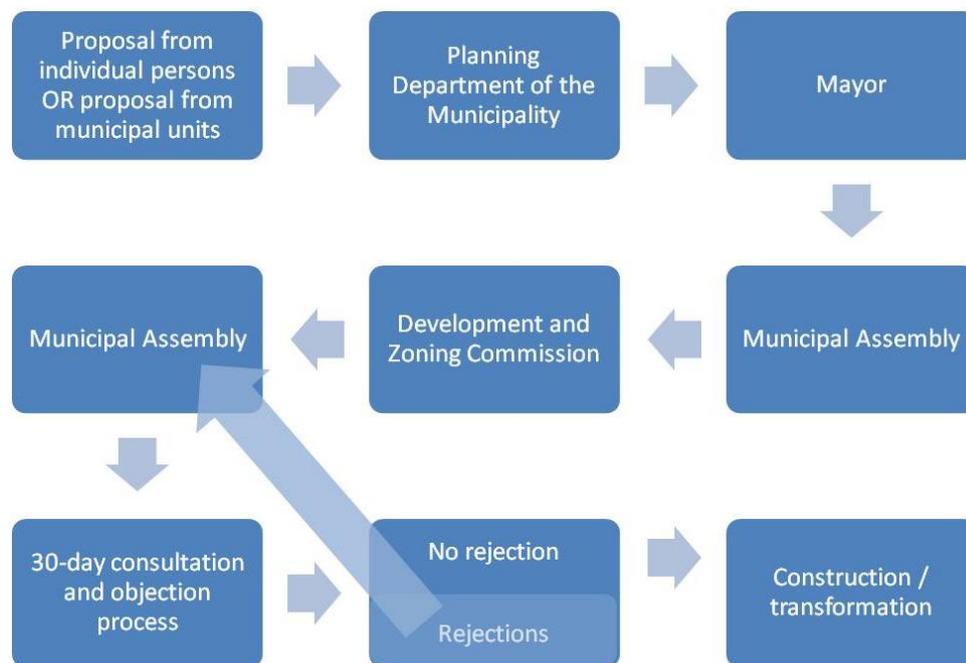


Figure 2 Plan amendment process (source: author's own elaboration)

First of all, differential rent is generated in two ways in Istanbul and is based on the changes of the ownership of the land. Figure 3 demonstrates this structure and the actors involved in various steps of this process. The figure is based on personal interviews with the representative of the Chamber of Urban Planners and one of the members of the Municipal Assembly, decisions of the Municipal Assembly, court documents, national newspapers and non-academic journals on internet.

The first mechanism operates through the declaration of the publicly owned land or partially private land as a "transfer centre" or a "tourism and commerce area/centre" by the Istanbul Municipal Assembly. Following this, the assembly decides (based on the opinion of related

¹ For instance, 2009 Master Plan of Istanbul, a comprehensive study based on four years of data collection, analysis and a wide spectrum of expertise, proposes polycentric development for Istanbul in the East-West direction. However, soon after the plan was published, three major projects were suggested by the Prime Minister himself prior to the National Elections. These projects are; Third Road Bridge over the Bosphorus at the Northern end of the city, a road tunnel connecting the city from south and a new 50m wide canal connecting south to north. First two projects have been included in the latest Transport Master Plan (2012).

municipal units) upon new construction rules on these transfer centres. According to the Istanbul Municipal Assembly's decision number 1985 on Ayazağa Transfer Centre on 16.09.2010, a "transfer centre" may include:

2. Park and ride facilities, parking space, shopping mall and/or cultural centre and/or congress centre and/or education centre and/or hospital and/or tourism centre, office, apart-hotel (residence) functions.

And the plan should be implemented according to the avant (pre) project:

3. [...] Avant project will be prepared by the coordination between the Transport Planning Department and the interest groups (for spatial use, pedestrian-private and transit vehicles connectivity, parking capacity and entrances and exits, connection to the rail system, management plan for the building, parking space and protocol for the usage of the transfer centre) and will be implemented by the approval of the Greater Municipality of Istanbul.

The council defines the tourism and commerce centre as (taken from the amended plan notes of 1/5000 Sisli District Plan decided on 07.11.2010);

3. Tourism and commerce centre may include; hotels, business centres, residences, offices, shopping malls, cinema, theatre, entertainment centre, multi-storey shops, museum, exhibition hall, cultural centre, restaurant, cafes and financial institutions.

The council also suggests for this particular place that;

11. A connection to the metro station can be made.

Second mechanism operates as follows. First, the planning conditions on a publicly owned land are changed by the Municipal Assembly to a "tourism and commerce centre" or a "transfer centre". Later on this land is sold in an auction to the highest bidder. The main difference between two processes is the transformation of the ownership of the land from private to private or from public to private. However, in both cases the construction rights are increased before privatisation (if needed) in order to increase the value of the land before transactions. Therefore, the land is sold by the municipality or by a national institution (such as the Housing Administration and the General Directorate of Highways) after a rise is given to its value by the Municipal Assembly. Despite slight differences between two mechanisms the result is the same: generating differential rent over urban land.

Secondly, agency constitutes an important part of this process. Actors are involved at different stages in the process and make different contributions (Figure 3). While the Metropolitan Municipality, Municipal Assembly, the Mayor, Ministers of the ruling party and National government's units such as the Housing Administration (TOKI) have encouraging roles in the process in collaboration with developers and investors; professional chambers and some individuals (experts, members of the council or the opposition party) may have opposing roles. After the decision is made, individuals or professional chambers may address to the court in order to change the decisions. Administrative courts and court experts consulted by the court may or may not approve the decisions which may lead to either revisions of the decision by the Municipal Assembly or the case to be taken to a higher court, Council of State, by the Assembly.

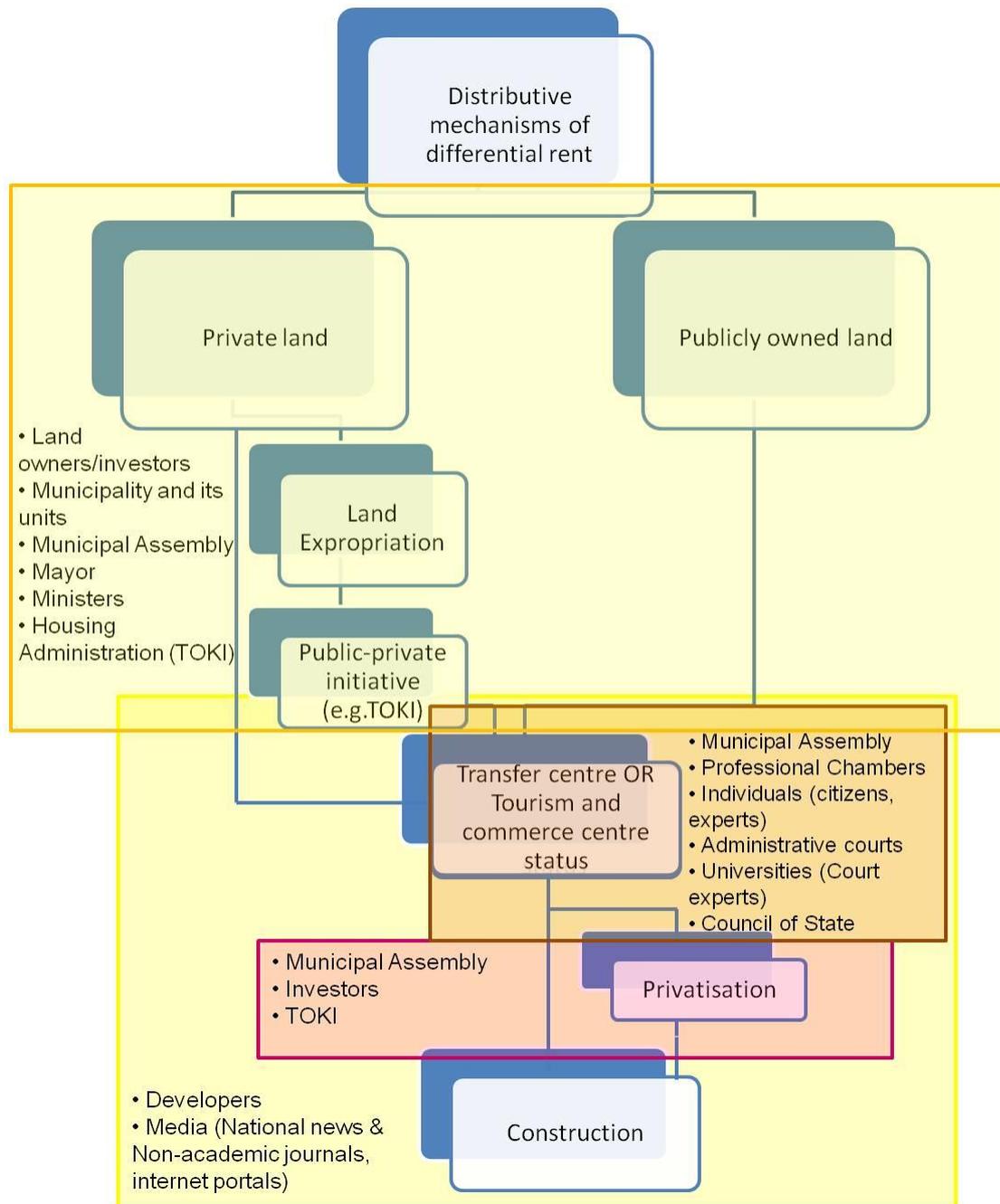


Figure 3 Distribution mechanisms of the differential rent on the Büyükdere Axis, the case of Metro (source: author’s own elaboration)

In this sense, the plan amendment process looks like it is democratically structured. However, power relationships between different actors in the process are likely to influence the decision-making process.

In terms of democracy... it is based on pluralism (*not on consensus*). Decisions (*proposals*) are brought to the agenda of the Council² based on Mayor’s or ruling party’s will. Council decide to say yes or no to these decisions (*mentions that the ruling party would have the majority anyway, therefore, they would have the final word*). Meanwhile, people who are opposing to the decision can present their positive or negative views. They may mention that they do not

² Municipal Assembly or City Council.

agree with the decision. If they are in the *planning* commission, they can place declaratory clause to the decision; if they are not powerful enough in the commission they can address to the council in their party groups and reason their objections.... Have they got other alternatives? Well, they can take the decision to the court, object (*further*) or address to the media. That is how the system works. [...] In any case, if the Mayor does not want *the decision to be made*, he would not send it to the Council. Even if he does send it, he would ask the ruling party to object the proposal.

Politician, 2011 interview (words in italic, my notes)

It can be understood from this statement that the Mayor and therefore, the members of the Municipal Assembly from ruling party, are the most powerful actors in the decision making process. Thus, these groups are the drivers of the agenda on plan amendments. Yet, it is arguable to what extent the members of the Municipal Assembly engage with these planning decisions. Based on an observation of the decision making process in a district municipality during the fieldwork, it is possible to state that the decisions are made in a very short time and without much discussion. The number of plan amendments in a year supports this argument as one of the interviewees mention.

Istanbul Metropolitan Municipality approves about 1000 plan amendments in a year. How does the Municipal Assembly work? Members of the Assembly redistribute large (*economic*) surplus from one place to another just by raising and dropping their hands and create an enormous rent in Istanbul. This rent is never taxed in Turkey, urban rent is not taxed.

Representative of the Chamber of Urban Planners, 2011 interview (words in italic, my notes)

The above quote also suggests that as the urban rent generated through plan amendment processes is not taxed, it is not beneficial for the state, therefore, the public. Although the Municipality usually gains from the transaction of municipal land, it uses its initial gain by bringing physical infrastructure to those areas that accommodate new functions. There are cases in which the municipality negotiates with developers for new environment design or pedestrian crossings, however, it is not clear how much of developers' gain is passed on to such projects concerning public good.

Moving on with the attitudes of the actors in the plan amendment process, it is also possible to discuss that, even though ministries do not have a say in this process, they show their support to the municipalities ruled by the same party. Moreover, the Mass Housing Administration (TOKI) has the power to declare any area or a building plot as an urban transformation area and can purchase and sell land. Being a part of the national government, it has slightly more power than other investors.

Professional chambers, NGOs and individuals (citizens, academics, council members etc.) have the power to object the decisions by informing the Municipality and if they do not receive positive response they can take these decisions to Administrative Courts. However, legal cases *occasionally* result in their favour³. Moreover, they can generate public awareness via the channels of the media and try to create a greater objection to these decisions. However, the media can also be used by the municipality to legitimise their decisions. Therefore, these groups are less likely to have a significant impact on these

³ For instance, in the case of plan amendments on the plot that Zorlu Centre has been built, Chambers of Urban Planners, Architects, Civil Engineers and Cartographers-Cadastral Engineers sued the Ministry of Public Works (currently, Ministry of Environment and Urban Planning), Istanbul Metropolitan Municipality and Prime Minister's Office Privatisation Administration as well as Zorlu Holding based on the decision being against public good and planning principles. Even though decisions by the court were in favour of these chambers in 2008, the situation has turned in favour of investors and national and local authorities in 2009.

issues. Having said that, previous (e.g. the Park Hotel) and recent (e.g. the Transfer Centre planned in the plot abandoned by the Galatasaray Stadium, Figure 1) success stories exist.

Although the Istanbul Metro is not directly related to the decision making process in terms of plan amendments, it has an important part in the decision itself and a crucial role in the construction process. According to Municipal Assembly's description of Transfer Centres and Tourism/Commercial Centres discussed above, direct connections to the Metro can be made from the plots that are given such status. Yet, many new developments that offer mixed uses with shopping malls, office buildings and residential areas mentioned earlier, have benefited from the existence of the Metro stations in the area by gaining excessive construction rights compared to the neighbouring plots. As it is discussed in the next section in the case of the Zorlu Holding, even the developments with no direct access to the Metro are seeking to establish these links. In this sense, the Istanbul Metro can be described as an important spatio-political tool in the generation of differential rent in Istanbul.

3. Distribution of capital

Based on the discussions in the previous section and in a previous work (Beyazit, 2013), it is possible to comment on the Istanbul Metro's impacts on the accumulation of capital. Changing planning and construction rights encourage connection to the Metro stations from tourism and commerce centres. Even though changes in building allowance and planning rules cannot be attributed solely to the Metro, the ways in which the Metro is used in Municipal Council's decisions point out to the importance of connection between the Metro and such functions.

Rights for higher densities are supplied under Transfer Centre status. What is done through these rights for high density?: Only allowing a connection to the Metro.

Especially, these rail systems (*Istanbul Metro, Kadikoy-Kartal Metro, Marmaray*) will create further consequences in Istanbul, maybe we will see that all shopping malls will move to the surroundings of these (*rail*) stations.

Representative of the Chamber of Urban Planners, 2011 interview (words in italic, my notes)

Spatial inequalities arise as the Büyükdere Avenue and its surroundings become favourable investment areas as a result of combination of local and national politics and the existence of the Metro. The Istanbul Metro, with the help of a series of planning amendments, has fostered the functional changes in the area and has influenced the land prices.

You can see plan amendments in every station, the public buildings are sold at very high prices. Metro has affected and is affecting the functional space. There is no empty lot for sale in the area; the building density is very high; road traffic is tangled but the Metro has not reached its capacity yet.

Representative of the Chamber of Urban Planners, 2011 interview (words in italic, my notes)

As a consequence of high values captured through new connections made with the Metro stations, and yet the existence of limited empty lots in the area, new connections emerge between the Metro and Tourism/Commerce Centres even in cases where the plot is not within close proximity to the Metro stations. These situations occur as since investors consider such connection as an advantage (real estate developer, 2011 interview). For instance, based on an agreement between Zorlu Holding⁴ and the Mayor of Istanbul, a

⁴ Zorlu Group purchased the land of the Directorate of Highways after the plans for this plot were changed to include tourism and commercial function. Zorlu Centre is being built on this plot.

pedestrian underground crossing between the Gayrettepe Metro station and the BRT stop in Zincirlikuyu is being built by the investors of Zorlu Centre (Figure 1). The 717m long pedestrian tunnel with moving walkways will not only connect these two stations with each other but also provide seamless transfer between these transport systems and the Zorlu Centre where shopping malls, office buildings and residences can be found. Even though such agreements are made between municipalities and developers in order to capture the 'public good' in exchange for exclusive construction rights given to the developers, private gain becomes more important than the public good as seen in this example since the pedestrian tunnel will also connect these transport modes with the Zorlu Centre. More importantly, since it is the local authority agreeing for such a connection to be made between a private investment and two major transport links, it is possible to state that the Municipality and the Municipal Assembly act as contractors.

In terms of transport and urban planning, the role of Transfer Centres in transport network requires greater attention. In 2009, Istanbul Metropolitan Municipality had sixty-nine Transfer Centres planned for the entire city (IBB, 2009) and fifty-nine of these were included in 2011 Transport Master Plan (IBB, 2011). The location and number of these centres bring up questions on whether they are actually needed and if so, whether the construction rights given to these areas will shift the demand in the transport system. More importantly, the question of whether these centres are planned in order to facilitate the transport network still remains as discussions with experts demonstrate.

In a modern city, you cannot have transfer centres everywhere. Here (*in Istanbul*), since transfer centre means giving exclusive construction rights, it is a preferred function over shopping malls. In terms of function, transfer centre status is preferred because it brings mixed-uses. For instance, there are 5-6 transfer centres only in Mecidiyeköy. [...] In a way, it is a nice thing (*idea*) as it creates a public function with public uses in the ground floor and (*private*) ownership (*through construction rights*) in the upper floors, but this situation is gone out of control.

Representative of the Chamber of Urban Planners, 2011 interview (words in italic, my notes)

The above discussions suggest that the Istanbul Metro is a fixed capital (Harvey, 2005) that produces other fixed capitals such as shopping malls, residences, offices and transfer centres. Yet, such development generates in certain parts of the city and not distributed to the wider community, therefore, creates uneven spatial development. Changing regulations and plan amendments also have crucial role in this process and the role of politicians is very distinctive.

4. Concluding remarks

One can discuss that the ideal planning that advocates comprehensiveness and egalitarianism has lost its powerful image even as early as 1960s when criticisms towards it started to emerge (e.g. Jacobs, 1961). As cities maintain their power in the political arena and their importance continue to increase, urban planning has changed its focus from comprehensive and strategic plans to partial projects in practice (Graham and Marvin, 2001). This transformation can, to a certain degree, be explained through changes in world economy and the deconstruction of the idea of state and entanglement of cities autonomously to the global economy and therefore, through the clash of political and economic powers. In this debate, the plan amendment process in Istanbul demonstrates crucial points on the consequences of drifting away from comprehensive approaches to planning.

First of all, following an approach based on the analysis of structure and agency of various political processes, this paper has shown that the plan amendment process is not

straight forward but rather very complicated. This complexity generates as a result of many actors participating the process one way or another at different levels, in different time periods and changing the course of events. Therefore, such process can be regarded as a multi-dimensional political platform and can be evaluated within the debates of power geometries where some actors are more powerful than others. Some actors, especially from the members of the ruling party in the Municipal Council, get more say in this process and they use plans as a direct (and a powerful) tool to apply their decisions. Others, on the other hand, are restricted mainly by the law and lack the ability to manoeuvre. Therefore, it is possible to suggest the existence of the hegemony of the most powerful actors over less powerful ones in terms of urban planning in Istanbul.

Second, one of the main consequences of partial planning is the accumulation of physical capital in certain areas and the lack of distributive mechanisms concerning the economic and social benefits obtained from new projects. Exclusive construction rights given to certain plots add economic value to the land and differentiate them from nearby areas. The owner of the land or the new buyer/developer gains extra land rent which is not taxed and therefore, the public do not gain from it. Moreover, additional projects offered by the developers to the municipality, such as the pedestrian tunnel constructed by the Zorlu Company bring more private gain than public gain as they propose connections between public transport and their shopping/residence/office units. Therefore, through the analysis of the plan amendment process it is possible to comment on the uneven geographic development in urban areas.

Third, even though the Istanbul Metro is not the main concern of plan amendments, the ways in which it is used by the Municipal Council makes it significant to the process in two ways. First, the Istanbul Metro creates the conditions for an area to become a Transfer Centre and helps the area gain additional construction rights. Second, it increases the value of the property which is constructed with a direct access to one of its stations. As a result of the Municipal Council's decisions, differential rent is generated in the city over the existence of the Istanbul Metro and distributed unevenly to certain groups in the society, allotting spaces based on which company or companies provide the highest tender. Furthermore, the access to the Metro stations is important for investors as it makes the investment in these areas (e.g. shopping mall) preferable for customers. The Istanbul Metro, therefore, facilitates the circulation of capital as well as the accumulation of it in certain areas. The use of the Istanbul Metro as a case study has demonstrated the importance of fixed investments such as transport investment in creating accumulation of capital and therefore, contributing to the generation of uneven geographies.

Despite the growing trend on focusing on partial projects in urban planning, this paper has demonstrated that in order to overcome socio-spatial inequalities and establish democratic decision making mechanisms, comprehensive approach to planning is crucial. Yet, this approach, as we know of it in the planning discipline, should be reformulated with the aim of inclusiveness, participation and "just" distribution of benefits. It should propose a democratic structure that is not based on pluralism but based on consensus. Recent events in Istanbul have provided important lessons for the transformation of urban planning discipline. The protests against the demolition of Gezi Park in Istanbul have been followed-up a country-wide unrest due to the excessive force used by the police and lack of anticipation by the government. More recently, park/neighbourhood forums have demonstrated how the public and different actors can come together, share their opinions and decide on various actions concerning public good and common interests. Such examples may shed light to the ways in which urban planners may overcome the conflicts and clashes between the notions of power, politics and planning in transforming cities.

References:

- Beyazit, E. (2013) Transport and Socio-Spatial Inequalities: The Case of the Istanbul Metro, Thesis submitted for the degree of Doctor of Philosophy, School of Geography and the Environment, University of Oxford

- Castells, M. (1996). *The rise of network society*. Oxford: Blackwell.
- Castells, M. (1997). *The power of identity*. Massachusetts: Blackwell.
- Foucault, M. (1976) *Power*. Faubion, J.D. (ed.) Essential Works of Foucault 1954-1984 Third Volume [1994] London: Penguin
- Graham, S. and Marvin, S. (2001) *Splintering Urbanism: networked infrastructures, technological mobilities and the urban condition*. London: Routledge
- Harvey, D. (1973) *Social Justice and the City*. Maryland: John Hopkins University Press
- Harvey, D. (1990) *The Condition of Postmodernity*. Oxford: Blackwell Publishers
- Harvey, D. (2006) *Spaces of global capitalism: towards a theory of uneven geographical*
- Harvey, D. (2012) *Rebel Cities: From the Right to the City to the Urban Revolution*. London: Verso.
- IBB (2009) Transfer Centres 20.03.2009 www.ibb.gov.tr
- IBB (2011) *Istanbul Metropolitan Area Transport Master Plan*. Istanbul, May 2011
- Jacobs, J. (1961) *The Death and Life of Great American Cities* New York: Vintage Books/Random House
- Jager, J. (2003) Urban Land Rent Theory : A Regulationist Perspective. *International Journal of Urban and Regional Research* 27(2), pp.233–249
- Kanyon AVM (2011) About us. <http://www.kanyon.com.tr/> last accessed on 15.12.2011
- Lefebvre, H. (1976) *The Survival of Capitalism*. Translated by F. Bryanit London: Allison and Busby
- Marx, K. (1990) *Capital III* London: Penguin Books
- Soja, E. (2010) *Seeking Spatial Justice*. Minneapolis: University of Minnesota Press

2 West Masterplan: A New Paradigm in Urban Planning

Bij Borja, JTC Corporation, Singapore

INTRODUCTION

“Urban density spurs innovation”

With just approximately 730 square kilometres of land area, the competition for land and labour in the small island state of Singapore has increasingly heightened. To tackle such issue, new urban planning approaches and innovative strategies have been developed to further optimize land and increase productivity in Singapore. As the nation's leading industrial developer and master planner, JTC Corporation (JTC), a statutory board under the Ministry of Trade and Industry has progressively positioned itself as one of the key drivers of land intensification by constantly innovating and thinking of out of the box solutions while staying true to its vision of creating a dynamic and integrated industrial landscape.

By 2030, the population of Singapore is expected to be at 6.9 million which will result to a denser built environment. Inevitably, industrial land will be in close proximity to other land uses such as residential and commercial areas. Thus, the challenge will be how to integrate the different land uses while maintaining the liveability of the estates in Singapore. Hence, as the primary developer of the nations' industrial estates, JTC has started to masterplan its future estates to become sustainable and liveable environments where both industrial and other non industrial uses co-exist.

This paper will share one of JTC's newest developments, the 2 West Masterplan, and will discuss the future ready and innovative planning concepts in structuring and strategizing the master plan's overall framework. It will also discuss the planning approaches adopted in addressing the concerns over land scarcity, better distribution of good jobs and urban liveability through mixed-use integration and through the development of a new urban infrastructure.

1. The 2 West Conceptual Masterplan

After JTC's highly successful one North, a 200 hectare work-live-play-learn development which is home to clusters of world-class research facilities and business park spaces, the corporation has now embarked on shaping another integrated development, the up-and-coming 2 West. A conceptual masterplan has just been developed to transform this 700 hectare site consisting of CleanTech Park, Nanyang Technological University (NTU), Wenya Industrial Estate and part of Tengah New Town into a mixed use development with work-live-play-learn and make elements. Located in the western area of Singapore, 2 West derived its name as it is the 2nd integrated development with work-live-play-learn components developed by JTC after the one north development.

The main objectives of the master plan is to intensify land use, to enhance the connectivity, liveability and vibrancy of an industrial township and to increase the potential synergies between NTU, Cleantech Park, Wenya, Jurong West and Tengah New Town developments. 2 West is envisaged to bridge the gap between research & development and manufacturing with prototyping, pilot testing and process optimisation while industry focus includes Clean Technology, Materials Science and Manufacturing Technology (3D Printing, Robotics, Advanced Manufacturing).

1.1 Challenges of Conventional Planning

In order to conceptualize new urban planning concepts for this integrated development, conventional planning norms have been reviewed to address its existing issues and challenges. Thus, in structuring the master plan's overall framework, the few questions below have been formulated with the intention to come up with innovative planning resolutions.

- Can we rethink some of our current policies to adapt to a new way of masterplanning and developing JTC's estates?
- How do we make use of limited resources in an environmentally sustainable manner?
- What is the most suitable developmental or business model in creating cost effective working and living environments?
- With the growing population in Singapore, how can we accommodate various uses within a dense yet liveable urban space?
- How can we tap on new methods & technologies in construction as well as IT technologies to enhance the built environment within a Smart city and making it future ready?

1.2 Championing New Concepts

In response to the challenges posed above, a number of strategies for the 2 West masterplan have been developed which aim to champion new concepts in the following 5 areas:

- **Policies**
We aim to review current policies and regulations to facilitate innovative development models and breakthrough infrastructural solutions.
- **Environmental**
To save and optimize land as it has become a scarce resource and be environmentally sustainable in our masterplanning and development efforts.
- **Economic**
To explore potential developmental models and partnerships that can be formed from integrating various uses within single developments.
- **Social**
To develop eco-districts that shall encourage interaction within communities as well as walkable mixed use districts.
- **Technology**
To bridge the gap between the academic research and industrial manufacturing, so as to encourage and facilitate 'prototyping' that would enhance the test-bedding possibilities in the area. Moreover, to integrate sustainable estate-wide goods mover systems and people mover systems to improve on the last mile logistical and transport issues of the flow of goods and people.

2. Key Planning Principles

To address the concerns over land scarcity, better distribution of good jobs and urban liveability, the following four key planning principles were adopted to strategize the planning framework for 2 West.



Source: JTC Corporation

Figure 1 : The key planning principles adopted for 2 West include (Left) integrated development with seamless connectivity, (Center) liveable and walkable urbanism, and (Right) environmental sustainability.

2.1 Integrated Development with Seamless Connectivity

2 West is envisaged as a sustainable integrated mixed-use development wherein various land uses such as commercial, residential, industrial and institutional harmoniously merge. Within this development, industries and companies are clustered together to share common facilities and services. Seamless connectivity is achieved through the development of an efficient infrastructure that facilitates effective flow of goods and services as well as people.

2.2 Liveable and Walkable Urbanism

The 2 West development shall heavily promote pedestrian mobility and encourage walking. Residential homes, recreational facilities and amenities are within walking distances from places of work to reduce travel time and reduce strain on the public transport system. Increased walkability shall bring forth not just health benefits to many individuals but also social benefits to the entire community as it brings about opportunities for social interaction. Hence, a sound pedestrian network shall be developed within 2 West with strong considerations for accessibility, good street designs and creative placemaking.

2.3 Vibrant and Compact Mixed-use Setting

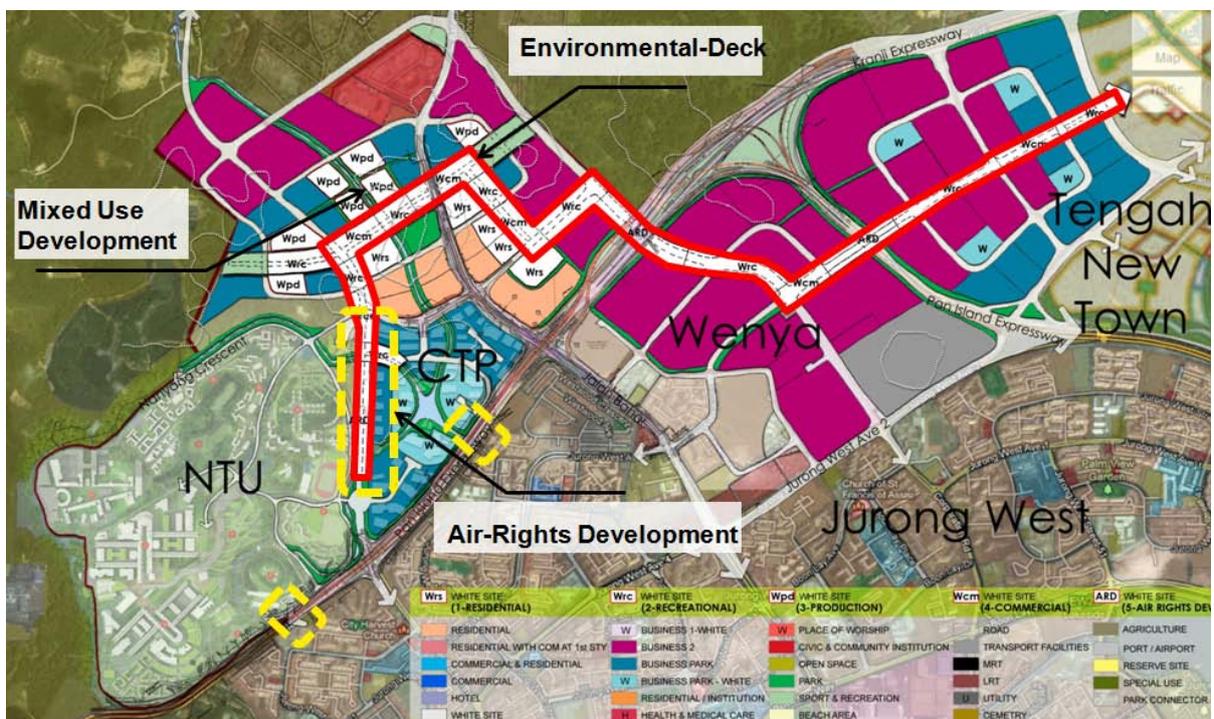
The planning of 2 West shall adhere to high-density and compact planning strategies thereby reducing urban sprawl and creating efficient land-use synergies. The various nodes within 2 West shall be anchored with transit oriented developments. These areas shall offer mixed-use settings along mass transit corridors so that a variety of urban functions are densely located making it very accessible to people.

Vibrancy is another urban characteristic envisaged for 2 West. Although compact developments are planned, lively street life and dynamic public spaces shall be designed to create a vibrant setting. These urban design considerations shall help build a distinctive neighbourhood character and shall help foster attractive communities with a strong sense of place that reflect the values and culture of the modern Singaporean society.

2.4 Environmental Sustainability

As land is a valuable commodity, the overall planning framework for 2 West warrants environmental sustainability efforts as one of its primary objective is to improve the quality of life of its users. The urban framework is set not just to resolve how land should be properly used but also how the environment should be well safeguarded.

Although JTC drives the development of 2 West, the corporation also collaborates with various government agencies in harnessing state-of-the-art green technologies to respond to environmental protection issues, climate change, energy conservation and resource optimization. In addition, to ensure sustainable urban growth for 2 West, proper urban management shall be adhered through the formulation and implementation of innovative policies. Through this, businesses, industries and the whole community become responsible in reducing negative impacts to their environment.



Source: JTC Corporation

Figure 2: The masterplan for 2 West creates synergies between the districts of NTU, Cleantech Park, Wenya, Jurong West and Tengah New Town

3. Key Urban Features at 2 West

The 2 West masterplan focuses on the following three (3) key features conceptualized in response to the issue of land scarcity and increase in productivity:

3.1 Mixed Used Developments

With the adoption of smart growth principles, mixed-use developments shall constitute the key district nodes of 2 West to facilitate work-live-play-learn and make activities. Industrial buildings, business parks, offices, retail shops, residential homes, recreational facilities, communal amenities and a university shall intermix in this vibrant and compact yet liveable setting. Vertical mixed-use developments are also encouraged within 2 West to hinder mono-use of a single plot and to amplify a building's efficiency.

To suffice the residential demands in 2 West, affordable housing and rental housing models are considered for the residential quantum so as to meet the accommodation needs of the workers in 2 West including researchers on short-term visits and foreign students attending short-term courses. As 2 West upholds compact planning, various essential facilities and amenities that support the different housing estates shall be of easy access by the residences.

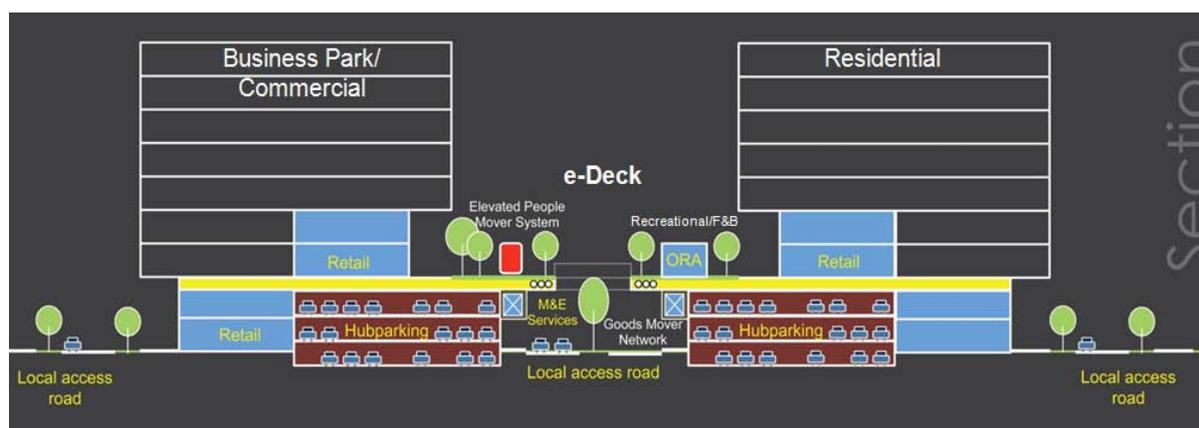
3.2 Environmental Deck

One of the key planning principles for this development is to create seamless connectivity and integration between the districts of 2 West and their surrounding communities supported by the cutting edge economy and technology. The enabler of such strategy is the Environmental Deck (or e-Deck for short), an innovative system of multiple functions that redefines the concept of urban infrastructure. Considered as the highlight feature of this development, the e-Deck is an innovative urban infrastructure envisaged to link up the various elements in 2 West and span approximately 5 kilometres across the entire site. It is an efficient form of a synergistic relationship between public facilities such as public open spaces, amenities and hub parking, the environmental and micro climatic medium such as urban greeneries, storm water management, a state-of-the-art logistics system such as the Estate-wide Goods Mover System (eGMS) as well as common services tunnels providing plug & play utilities options for companies such as electricity cables, water pipelines, sewer pipelines, gas pipelines and telecommunication lines.



Source: JTC Corporation

Figure 3: An aerial view of the 2 West development showing the e-deck that connects the various mixed use developments - industrial, business park, commercial, institutional and residential. Recreational facilities, amenities and the people mover system will be provided at the e-deck, whilst goods mover system, utilities, services, hub parking and roads will be located under the deck.



Source: JTC Corporation

Figure 4: A sectional view of the e-Deck illustrating the people mover system, recreational, landscaping, and F&B spaces above the e-Deck with the retail shops and amenities on the 1st two floors of the buildings next to the e-Deck and the public roads, hub parking and goods mover system under the e-Deck.

Elevated Green Core

Although the concept of environmental deck is not new, this is the first time that such concept will be implemented in a very large scale. As a green artery, the e-Deck will first and foremost serve as an elevated communal green space acting as the main activity spine, providing shared amenities, F&B spaces and public gathering spaces for residents and workers to congregate and interact 24/7, thereby enhancing liveability and vibrancy at 2 West. There is also a continuous space for a variety of recreational activities along the e-Deck that promotes healthy lifestyle and improves quality of life such as running paths, fitness corners and cycling routes.

People Mover System

The deck level will also be integrated with a green Transport System that provides efficient public transportation and strengthens the development's accessibility by linking up the various districts within 2 West. The people mover system will possibly be connected to the main Rail system and there shall be provision for smaller people mover system and cycling paths outside the e-Deck to further establish a good transportation network.

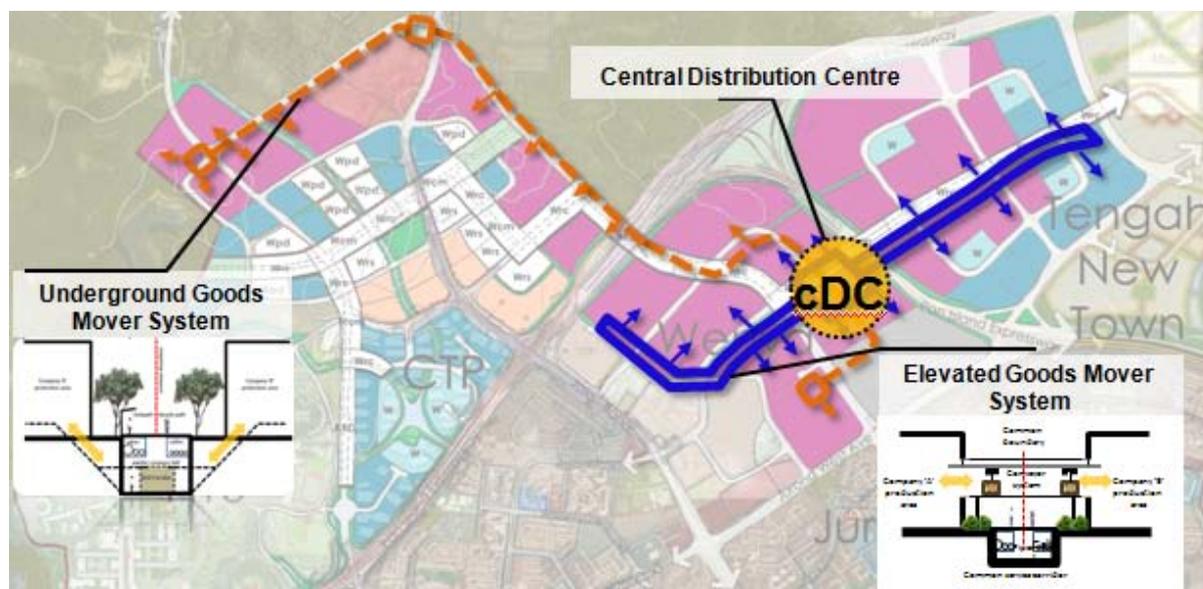
Hub Parking

Housed underneath the e-Deck are two other major components that make up the shared infrastructure system. First is the hub parking, a network of multi-storey car parking facilities catering to the various industrial, commercial and vertical mixed used developments along the stretch. Accessed via the public local road, the hub parking facilities are very accessible to the nearby buildings as most of the surrounding developments are planned within 10 minutes walking distance from the e-Deck. The hub parking aims to reduce the requirement of providing individual car parks for each of the buildings as well as to reduce congestion. Consolidation of the parking spaces not only warrants land savings but also highlights walkability and the inclusiveness of the e-Deck to pedestrians as these facilities are well segregated from people.

Estate Goods Mover System (eGMS)

The other major component under the e-Deck is the estate wide goods mover system (e-GMS), an automated smart logistic system for the distribution of goods to the various industrial developments within the estate. The system is connected to the Centralized Distribution Centre which is eventually linked up to the sea port, the centralized underground warehouse facilities and other industrial estates along its corridor. After arriving at the port,

raw materials and goods are sent to the centralized distribution center (CDC), the main warehouse distribution and sorting hub functioning as the heart of this state-of-the-art goods delivery system. From the CDC, pallets of goods travel via an automated track and delivered to individual industrial companies. Finished products from the industries are then sent back to the CDC via the eGMS for distribution to the companies' various customers.

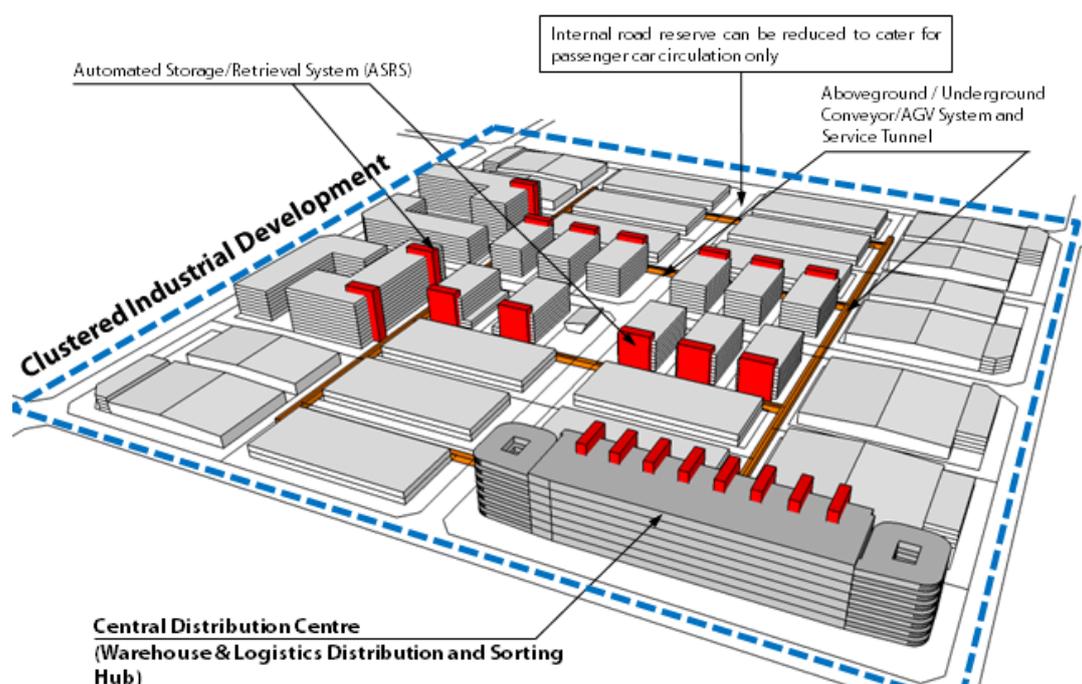


Source: JTC Corporation

Figure 5: The estate wide goods mover system corridor at 2 West with an elevated goods mover system located along the e-Deck and an underground goods mover system provided outside the alignment.

The eGMS aims to facilitate the movement of goods from point to point without relying on highways and roads, potentially relieving traffic congestion. Current typical industrial developments have individual warehouses and loading/unloading zones dedicated to each industrialist's needs and through outsourcing of each industrial development's goods storage, loading and unloading processes to a centralized third-party logistics solution provider, land taken up by these large roads, internal driveways, warehouses and loading/unloading zones shall be heavily reduced. Additionally, the eGMS can assist in curbing the vehicle population growth and help in freeing up additional land for other productive uses as well as mitigate the health and safety buffers imposed by the movement of hazardous goods.

From the end-user's point of view, clear predictability of suppliers' movements and delivery schedules can also bring about cost savings, and facilitate an increasingly just-in-time production model across an industrial park. Freight movement along the e-Deck via eGMS shall be elevated while goods movement running outside the e-Deck alignment is proposed to be underground. The eGMS is envisioned not just to serve 2 West but also the other industrial estates in Singapore thereby creating an island-wide automated goods system.



Source: JTC Corporation

Figure 6: A conceptual simulation of the eGMS showing how the centralized distribution centre serves a cluster of industrial developments with the aid of technological systems such as the aboveground/underground conveyor system and automated storage retrieval system.

3.3 Air Rights Development

As a land creation initiative, air rights developments are also planned for 2 West so as to make full use of typically unused air space above roads for new developments. The overall objective is to create elevated structures that can span across existing thoroughfares with the intent of supporting a range of different land uses such as commercial, institution, industry and transport. Exploring air rights development can further contribute to significant land savings and could potentially improve connectivity between spaces previously inaccessible as well as facilitate better movement of people and goods.



Source: JTC Corporation

Figure 7: The conceptual air-right development decking over Ayer Rajah Expressway will create more land and synergize one-north's mixed-use development with Science Park which has been separated by the expressway.

4. Moving Forward

In order to ensure that JTC's visions for 2 West shall be implemented and turned into reality, the next step to be taken is to focus on research and development. Through R & D, the micro details of the proposed elements including technical feasibility, financial viability, operational costs and system limitations shall all be carefully studied and investigated assuring successful execution in the future. The results of the studies will definitely aid and guide the planners in developing the detailed design of the masterplan and in finalizing the details of the various urban elements within 2 West.

The conceptual masterplan has generated a number of R & D opportunities in various areas relating to the 2 West development. For the environmental deck, modular, prefab and large span structure design including construction for multi-phase development can be further explored. The details on how to effectively incorporate the people mover system, common services tunnel, recreational facilities, green and blue features, storm water management as well as biodiversity shall also be carefully analyzed to ensure synergy. For the air rights development, JTC is exploring new construction materials and building technologies for long span and heavy loading. Cost effective M&E systems for ventilation, health and safety, evacuation management as well as cost effective system for fire safety & protection are also being thoroughly examined.

JTC will be collaborating with the National University of Singapore (NUS) to embark on the feasibility study for the estate wide goods mover system with the objective of developing the detailed design of this smart logistic system. The study shall look into the potential goods mover corridor alignment, ideal speed, safety & security, mode of goods movement, potential scalability and applicability to other industrial parks. The research also aims to identify the most suitable business model, to resolve last mile issues as well as to develop a software for the effective automation of the eGMS.

CONCLUSION

With limited land supply, increase in population and rapid industrial evolution, Singapore's urban landscape is constantly transforming. As the country's industrial landscape custodian, JTC is also constantly keeping up with the change of times and with the fast transition of industrial and economic demands. The 2 West development is a fine reflection of how JTC responds to urban concerns through creative advanced solutions. Indeed, 2 West can be considered as a new paradigm in urban planning as the master plan made use of innovation and technology as the key enablers in resolving the challenges of urbanization, hence bringing forth sustainable growth in Singapore's urban planning milieu.



Figure 8: This is another artist impression of the potential 2 West development showing the seamless connectivity between NTU and CleanTech Park. It will be a vibrant meeting place and collaborative environment for industrialists, researchers, academics and students to come together to imagine, create and testbed the next disruptive technologies and groundbreaking innovations.

Bij Borja
JTC Corporation
Singapore

Planning for Mining Regions: Building Local Government's Capacity in a Multi-stakeholder Collaboration Scenario

Isabel Buitrago-Franco

Sustainable Minerals Institute and

School of Geography, Planning and Environmental Management

i.buitragofranco@uq.edu.au

and

Tathagata Chatterji

t.chatterji@uq.edu.au

School of Geography, Planning and Environmental Management

1. Introduction

In recent years there has been increasing emphasis across the world on decentralisation of planning processes¹. The old form of regulatory planning by the state agencies is being replaced by more inclusionary practices through co-option of the non-state actors in the civil society and the market in the decision making process. Such inclusionary processes are considered particularly vital under the rubrics of sustainable livelihood approach, adapted by the international funding agencies, to ensure that developmental outcomes meet the needs of the local communities in developing countries. However, emergence of bottom-up planning does not lead to erosion in the role of the state agencies in the planning process. Rather, newer demands are being placed on the state agencies, in coordinating and balancing competing claims between multiple stakeholders. However,, the role of the planning government agencies in mitigating the conflicting demands of the global economy and local livelihood, are under investigated – particularly in the context of the natural resource rich regions in the developing countries.

This paper compares and contrasts the role of the local government planning agencies in two mining regions of Colombia. Heightened global demand for natural resources is leading to escalation of mining operations in Colombia, by multinational and local mining companies. However, there are growing discontents amongst the local communities, who feel left out of this economic boom, and are stuck in poverty. Under these circumstances, the need for greater involvement of the mining companies to carry out developmental works at the local level, are recognized by the higher levels of the Colombian government; by local civil society activists as well as by the mining companies. However, operationalisation of this concept, this research shows, is to a large degree, handicapped due to capacity constraints of the local planning agencies. The local governments are unable to respond to demands regarding infrastructure development, employment generation, land-use regulation and social and environmental impacts of mining. The research draws attention to specific institutional deficiencies, in political and technological terms, which come in the way of the local agencies playing stronger role in a multi-stakeholder scenario in planning for mining regions and suggests certain remedial measures. The research is based on qualitative research

¹ We acknowledge the contribution of our PhD supervisor, Professor John Minnery, in the development of this paper.

involving, field observations and interviews of local government officials, mining company executives and community activists.

The rest of the paper is organized as follows: Section-2 provides a literature review about capacity building in planning at the local government level in the context of multi-stakeholder governance framework. Section-3 then provides a brief overview about the two case study areas. Following that, Section-4 compares and contrasts the role of the local governments in each of the case study areas, about their engagement with the mining industry. Section-5 concludes the paper through a summary.

2. Capacity Building in Planning and Multi-stake holder Governance

This research demonstrates how greater planning capacity at the local government level can empower the local communities to engage more effectively with powerful external stake holders, (like global mining companies) and gain from the extraction of mineral resources in remote natural-resource dependent regions in developing countries. Conversely, inadequate planning capacities, disadvantages the local communities in the local economic development process.

This is an area of research that had remained relatively less explored. Rather, most of the literatures dealing with planning issues in mining regions explore the decline of local governments' accountability (to respond to community's demands) after the arrival of global mining companies - a situation that intensified after the implementation of the state decentralisation processes (Fiszbein, 1997). Since 1980, decentralisation of the national-state in Latin America increased the responsibilities of local public administrations. However, this increased administrative responsibility had not translated into building capacities at the local level on planning issues.

Capacity-building is an evolving term that has been subject to multiple definitions. The term was first coined by the United Nations Development Program (UNDP) in 1990 and defined as a "long-term process by which individuals, organisations, networks, and societies increase their abilities to solve problems and achieve objectives" (UNDP, 1997). Since then it began to be introduced in developing countries as part of technical assistance programs to help communities cope with the changes caused by globalisation and economic restructuring (Amin & Thrift, 1992).

As defined by the United Nations, capacity-building is a long-term process that involves the commitment of multiple actors. Veiga et al (2001), for instance, state that "the first step to community sustainability ... may relate to local capacity-building and local governance". Similarly, the Institute for Environment and Development (IED, (2001) argues that capacity-building needs to be understood as a multi-stakeholder collaboration process that lasts before and after mining operations, intended to enhance existing skills in local communities. In addition, Loza (2004) defines capacity-building as an ongoing process that improves existing conditions in local communities and that requires the building of partnerships between corporations and communities. Indeed, capacity-building cannot be considered as a reactive response from mining corporations to tackle community problems but as a long-term process that takes into consideration community aspirations (Alizar & Scott, 2009).

Although the notion of community capacity-building is widely acknowledged in the scholarship, there is lack of understanding of existing capacity-building gaps within government organizations to effectively plan developmental strategies and implement good planning practices in mining regions. Lack of governmental expertise to negotiate global economic pressures and their implications on local livelihoods has also resulted in critical

poverty conditions of communities adjacent to mine-sites operating in the north of Colombia, the case study area.

In recent times, there are increasing thrusts on the mining companies to practice good corporate practices, which include building capacities of the local communities, in areas, where mining operations take place. Such practices are bracketed under corporate social responsibility. The Guidance on Social Responsibility, ISO 26000 (2010), defines capacity-building as a process that assists communities to achieve social and economic development standards. Moreover, it is stated that capacity-building is one of the most sustainable legacies that mining companies can deliver to local communities (International Council of Mining and Minerals ICMM, 2005). This notion is also regarded as a valuable legacy that fosters community development (Rio Tinto, 2011) and engagement (BHP Billiton, 2009) and forges sustainable communities (Barrick Peru, 2008).

Following global concerns regarding government capacity-building, a few scholars embarked on research that highlighted institutional capacity gaps. There is a general agreement amongst scholars from diverse streams like natural resource management and mining studies that governments need to strengthen their capacities in the development of policy frameworks for land-use and land-rehabilitation. Particularly, the need for up-skilling of the state agencies in areas such as mining projects monitoring and evaluation, transparency and mining revenues management are emphasised (Alizar & Scott, 2009; Bridge, 1999; Lahiri-Dutt et al, 2009; Mate, 2001). Inadequate expertise in planning issues had forced the local governments to secede leading role in the developmental agenda to the non-state actors in the corporate sector and civil society organizations, in a multi-stakeholder governance framework.

Discussions about of multi-stakeholder collaboration is frequently based on the assumption that governments, corporations and other stakeholders participate on an equal basis in decision-making processes and collaborate in the achievement of common goals (Clarkson, 1995; Gibson, 2000; Tracey et al, 2005). However, this simplistic multi-stakeholder collaboration approach can be challenged due to the idea that the relationships amongst actors are very often driven by factors such as unequal power relations, lack of clarity of roles and responsibilities, and tensions that limit the possibilities of effective collaboration. In Colombian mining regions, these multi-stakeholder relationships are becoming more complex as corporations are very often placed at the centre of development agendas (Cardenas, 2011).

These governance shifts have also allowed communities to become active rather than passive stakeholders and encouraged closer relationships between the community and other stakeholders like governments, NGOs and corporations. In the public sector recent public administration theories like new public management (Hood, 1991; 1995, pp. 3-4) gave more importance to citizens and their participation in public administration practices. The new public management approach led to the creation of participation mechanisms intended to legitimise public administration decisions and to help citizens make sure that public administration met social needs. Similarly, NGOs are gradually becoming integral to governance processes (Bell & Hindmoor, 2009, p. 5; Cashore, 2002, p. 503) which not only increased NGOs' responsibilities at the global and the local level in terms of public goods and services provision for community well-being but also in terms of assistance to governments to govern natural resources and to demand corporate accountability (Bell & Hindmoor, 2009, p. 5; Edwards et al, 1999).

Recent shifts in governance processes in mining regions have also led to a widening of the relationships between mining corporations and their stakeholders (Hamann et al, 2005, pp. 61-63; Mate, 2001, p. 18; Veiga, et al., 2001, p. 462). However, there are major challenges in practice. Scholars from schools of thought like corporate social responsibility, development

and environmental management argue that in reality, corporations engage with their stakeholders to pursue their own interests rather than in an effort to achieve sustainable initiatives for communities (Bebbington et al, 2008, p. 900; Hilson, 2006, p. 44; Jenkins & Yakovleva, 2006, p. 272). And weak state agency capacity exacerbates the problem.

Moreover, collaboration is posited as a win-win relationship based on permanent consensus. However, the tensions that might arise amongst stakeholders in governance scenarios have not been seriously explored. In the Colombian context, these tensions are manifested in lack of communication between mining corporations and their external stakeholders; low levels of trust amongst stakeholders; knowledge gap about stakeholders' roles and responsibilities; and lack of infrastructure and financial resources that prevent stakeholders, particularly governments from negotiating the developmental processes (Fiszbein, 1997).

This existing scenario in which the mining company is the 'star' and the stakeholders are the 'supporting cast' (Minnery, 2007) not only reveals the potential for collaboration but also the possibilities of resistance and conflict. Following Healey (2006, p. 314) and Minnery (2007, p. 341) the notion of conflict in this analysis does not necessarily imply a negative connotation. On the contrary, it is seen here as a resistance to change rather than an explicit confrontation between the parties. The following section discusses the lack of planning capacity of state agencies in a multi-stakeholder scenario and associated conflicting factors.

3. Case Study Areas

This section discusses the role of the state agencies in planning for mining regions through case studies in Antioquia and Risaralda, two mining districts of Colombia.

The state of Antioquia is located on the north Pacific coast of Colombia. It holds the largest reserves of gold, silver, coal, platinum and construction materials in Colombia. (Camara de Comercio de Medellin para Antioquia, 2010, p. 14; Sistema de Informacion Minero Energetico Colombiano, 2010, pp. 16-17). The region is going through a mining boom in recent years, which has increased the responsibilities of state agencies at the local level to deal with mining impacts.

Antioquia is also one of the largest administrative regions in Colombia. Census shows that Antioquia had an urban population of 4.340.744 inhabitants and 1.260.763 people inhabiting non-urban areas in 2005. Despite Antioquia's state agencies' active engagement in planning mining regions, there is a lack of capacity to deal with some of the most critical issues in this arena, such as employment generation, social and environmental impacts and land-use regulation. The local government's weak institutional capacity comes in the way to actively collaborate with other stakeholders to compensate locals for natural resource extraction and forge sustainable livelihood options.

The second case study area, Risaralda is a State located in the Colombian Andes mountain range. With the escalation of mining operations state agencies along with mining companies and civil society actors have collaborated to maximise social benefits in the mining boom. . Strong institutional capacity of the state agencies and active involvement of the local communities had enabled successful implementation of good planning practices in Risaralda's mining regions.

Although mining and exploration projects operating in Risaralda have major impacts on local communities, strong planning practices at the state level have helped communities benefit from mining and forge alternative and more sustainable livelihoods. According to census Risaralda has a population of 859.666 people by 2005. Out of the total population 665.104 people inhabited urban areas whereas 194.562 were located in peri-urban and rural areas. Evidence indicates that Risaralda's local public administrations hold stronger institutional

capacity than Antioquia’s local governments. This situation has allowed Risaralda’s government agencies to mitigate and better respond to mining impacts. The crucial differences between both case studies are shown in Table-1 below.

Table.1: Comparison of the Case Study Areas

	Risaralda Case Study	Antioquia Case Study
Population	859.666 inhabitants by 2005	4.340.744 inhabitants by 2005
Institutional Capacity	Strong institutional capacity	Weak institutional capacity
Developmental Outcomes	Strong planning practices that have led to: <ul style="list-style-type: none"> - Active community engagement - Active state agencies engagement 	Poor planning practices that have led to: <ul style="list-style-type: none"> - Lack of articulation between corporate and government agendas - Gaps between corporate agendas and regional development aspirations
		Capacity-building gaps: Multi-stakeholder collaboration (Corporate-government) Community engagement

4. Discussion

Empirical observations indicate that certain key factors have prevented the government from implementing effective planning practices, particularly in Antioquia case study. These limitations include lack of articulation between corporate and government agendas, gaps between corporate agendas and regional development aspirations and lack of governments’ capacity to foster community engagement.. However, other aspects such as effective communication and information governance are aspects that have to an extent enabled successful government’s interventions in planning for mining regions.

Antioquia case shows that there is little or no relationship between existing development agendas and local aspirations. Neither, there is coordination amongst stakeholders in the implementation of regional initiatives. Weak state agencies’ capacity to deal with mining related issues has major implications for Antioquia’s community development. Local public administrations struggle to effectively allocate mining royalties to tackle local issues and address community’s expectations. Similarly, they lack skills to formulate accurate community investment programs and development plans. This has resulted in a waste of resources and the implementation of initiatives that rarely meet community’s development aspirations. Instead, the implementation of irrelevant initiatives at the local level has further exacerbated the problem, creating discontent amongst locals. A case in the point is artisanal mining in Colombia. Local governments have shown inexperience to handle artisanal mining-related issues which has also had adverse impacts on communities. A group of local miners informed that

“ We want the government to support local miners. However, the government is good at giving orders but unable to come up with sustainable solutions for us. At the present time there are critical issues around artisanal mining. The government has ordered artisanal mines’ closure as part of the solution...but... What are the artisanal miners’ families going to do after closure? In addition, the government has not been able to provide us with meaningful education so that we can sustain ourselves in the long-term. Governments implement mining safety training and other initiatives that do not take into account our expectations (Interview, October 26th, 2012 Focus Group Local Miners)

Employment generation and education are two key elements of Antioquia’s development plan; however, due to lack of local governments’ capacity, the implementation of education programs keeps experiencing major challenges. Former education and employment generation initiatives have failed due lack of coordination amongst stakeholders but mostly due to the gap between these initiatives and existing regional development plans. Hence,

more articulation between these developmental agendas and existing regional needs is imperative to make them more effective. A prominent civil society activist informed when interviewed on 7 November 2012.

Late in the 90s, we thought that there was a skill shortage in the region and we embarked on up-skilling communities in mining. Out of 60 students, just 2 of them are currently working in mining; the rest of them became taxi drivers and bartenders... Similarly, high school students can hardly access tertiary education due to lack of economic resources. Indeed, there is a proliferation of educational initiatives, however, the quality of these actions and their effectiveness to meet regional needs are aspects that need major attention..

The lack of connection between local aspirations and existing development agendas, government's lack of capacity to make companies more accountable, on account of factors such as the proliferation of informal mining are factors that have exceeded local state agencies' capacity. Increase in mining activities by multinational companies in the region is causing resentment amongst locals whose livelihood options are mining-oriented. For some community members mining is considered as cultural heritage whereas for those who depend on it, this activity is seen as the only employment opportunity and therefore the only livelihood option. Most of the interviewees at the community level, in both case studies, were somehow related to informal mining. They are active informal miners, former informal miners or informal miners' family members. Although informal mining is not the focus of this paper is a case in the point to underline Antioquia's administration's lack of expertise to deal with mining-related issues.

Some informal miners and community members in Antioquia perceive large scale mining and exploration projects as a threat. The expansion of mining operations and the opening of new projects have partially occupied land that previously belonged to folk miners. Inconformity coming from community members led the government and other stakeholders in the region to take part in this issue. Governments and corporations are joining efforts to formalise artisanal miners, either providing jobs at large scale mining projects or implementing initiatives intended to compensate communities for the loss of their traditional livelihoods.

According to the community relations practitioner of a multinational company operating in Antioquia, had engaged with countrymen and miners and have carried out several agreements with these groups. These have led to sustainable projects and other types of compensation" (Community relations practitioner, interview, October, 26th, 2012). Corporate policies also reinforce this statement:

As we advance our activities in Colombia, with our joint venture partners and in some cases on our own, we look forward to engaging with legitimate activists and groups to visit our sites to form their opinions about what we are doing well and where we can do better. It is through such interventions that we can improve our interactions with the communities in which we work (AngloGold Ashanti, 2008).

The mining companies operating in the region and the state government are working in partnership to develop a community development initiative for artisanal miners. The strategy consists of four components, which are: employment generation, forging sustainable livelihoods, donations and other types of compensation. So far, 62 people have been trained in mining and have been offered a position at the mine. Others are currently participating in training initiatives in key areas relevant for the company. In accordance with the community relations practitioner this training might provide them with "alternative livelihoods and productive projects" (Community relations practitioner, interview, October, 26th, 2012). Additionally, the company is delivering money and/or negotiating other kind of compensation for natural resource exploration and extraction operations.

The state government claims that the outcomes of this initiative, particularly those based on training and education for employment generation, are tangible and communities are already experiencing the benefits of these initiatives: “Small businesses around mining such as restaurants, laundries and transport agencies have been created... (The) purpose (of these initiatives) is to help community members get organised and stop working in the informal sector” (Senior State Government Representative from Antioquia, interview, October 24th, 2012). The community practitioner of a multinational mining company operating in Antioquia, however, states that these small businesses are part of a shared agenda but they have not materialised yet (Community relations practitioner, interview, October, 26th, 2012). Interestingly, corporate and government’s statements regarding development plans implementation differs substantially.

Lack of coordination in multi-stakeholder agendas for planning mining regions is a persisting issue in most initiatives, at least in the Antioquia case. This is a factor that limits effective governance processes and prevents governments from meeting local expectations. This also demonstrates stakeholders’ unawareness of their roles and responsibilities, particularly governments’. These factors diminish stakeholders’ possibilities to better respond to issues relevant for the community. In addition, these barriers have resulted in a waste of resources when it comes to development plans implementation as governments not only lack the capacity but the resources to implement shared development agendas. Hence, multi-stakeholder agendas need to be developed on the basis of stronger governance practices and robust state agencies. On the contrary, existing limitations might not only compromise local development aspirations but also governments’ role in forging sustainable livelihoods and meet global economic expectations.

As stated above it is not only governments’ responsibility as there are contextual factors also associated with informal mining that have hindered governments capacity to meet stakeholders’ expectations. Although folk mining formalisation is a key theme in government and corporate agendas, community’s discontent remains which has resulted in major issues such as illegal groups involvement and therefore the escalation of armed conflict. These groups have permeated civil society organisations making difficult multi-stakeholder collaboration governance dynamics for planning mining regions. Although there are some governance arrangements in place, governments feel incapable to deal with and negotiate with these groups. A situation that has also compromised community engagement and local livelihoods.

Antioquia’s communities have become passive actors and cannot actively engage with other stakeholders as they feel threatened by the influence of these illegal groups. This has not only exacerbated violence in remote mining areas, but has also diminished community’s possibilities to benefit from corporate-government collaboration and therefore build sustainable livelihoods. “These illegal bands have found mining as a way to financially support their groups and are interested in controlling our territories rich in minerals and metals” (Community member from Antioquia, interview, October, 26th, 2012). Scarce community engagement mainly driven by global-local conflict dynamics and governments’ lack of capacity to deal with local tensions have also become limiting factors for planning regions in a multi-stakeholder collaboration governance scenario.

Despite existing limitations and governments’ lack of capacity to govern Antioquia mining region there are factors that could strengthen state agencies’ capacities. Identifying these factors and assist governments to enhance them in the frame of multi-stakeholder collaboration processes could potentially help stakeholders but particularly governments to overcome aforementioned barriers. The State government is currently developing alliances with tertiary institutions to implement development plans. A case in the point is a recent employment generation and infrastructure initiative that have elicited positive reactions

amongst locals (Complejo Tecnológico Minero Agroempresarial, 2012). Governance arrangements in place, specifically regular communication between involved parties and information sharing procedures to implement of these initiatives have been elicited positive outcomes for the region:

“The way we work is the following: We meet with 16 majors and formulate employment generation and infrastructure initiatives intended to respond to the region’s development plan. In doing so, we work closely with governments, companies and mining communities to agree on the initiative’s impact. We try to develop initiatives relevant for communities... However, all cases are different. There are times when those agreements are not very productive; however, when they take place, these initiatives have a positive impact on communities (Government Tertiary Institution Senior Representative, Interview, November 19th, 2012).

In fact, Antioquia’s stakeholders have strategies in place to facilitate the effective implementation of development plans, however, good governance and planning practices need to be further developed so that governments can enhance their capacity and overcome the factors that limit effective multi-stakeholder engagement which at the moment is preventing communities from meaningfully benefiting from mining.

On the other hand, Risaralda’s state agencies’ capacity and multi-stakeholder collaboration governance processes in place for planning mining regions show better outcomes. This has resulted in more sustainable legacies and livelihoods for communities. Effective governance processes have been the key drivers for development plans implementation and shared agendas in Risaralda. Amongst the factors that are currently fostering local development include existing clear public policies in place that oblige corporations to take part in local development and active community engagement:

“We do not want mining and exploration companies operating in Risaralda to extract our resources and leave the town without any legacies for the communities. We do not ask them for money apart from the royalties and taxes they are obliged to pay-. Instead, we want them to build communities’ capacity so that they can export their local goods internationally. This does not cost much to the company but benefits substantially the community” (Risaralda’s Senior State Government Representative (October 16th, 2012).

Indeed, the state government is playing a strong role in overseeing corporate social performance and supporting communities. This approach has become advantageous for locals as companies have become more accountable. Strong government’s capacity to support local communities has also resulted in more active community engagement and participation in public decisions. This has made Risaralda’s communities more capable to express their development expectations and demand corporate accountability:

“I have been working in mining since I was 7 years old. The company has provided us with some resources to participate in employment generation initiatives. I asked the company for an initiative in which we women could get some knowledge to sustain ourselves in the long-term. The company in partnership with a government VET institution implemented an employment generation strategy for women. However, we need more of these actions in Risaralda. Hopefully there are more coming” (Risaralda’s community leader, November, 23rd, 2013)

Active community engagement and stronger government capacity are factors that foster multi-stakeholder collaboration for Risaralda’s development. More importantly these factors have mainly been driven by state agencies. Hence, corporations and governments need to engage more often in collaborative approaches to build state agencies’ capacities, forge

sustainable communities and foster good planning practices in mining regions. Otherwise, existing limitations like lack of coordination amongst stakeholders, governments' capacity-building gaps to respond to local development aspirations and contextual factors will end up having adverse implications for planning mining regions impacting livelihoods of the local people.

5. Conclusions

This paper discussed the challenges of existing government capacity-building gaps and their implications for planning in Antioquia and Risaralda, two mining dependent regions of Colombia. Expansion of mining operations in natural resource-rich regions in Latin America has significantly stretched governments' capacity to respond to the demands of the local communities for sustainable livelihood opportunities by engaging with the multinational mining companies. Lack of skills in planning weakened the role of the local governments to negotiate effectively with the mining industry to shape the local developmental agenda. Shared agendas worked only for short-term due to the lack of coordination amongst stakeholders, but mostly due to weak institutional capacity at the government level.

In Antioquia case, government-led initiatives are irrelevant for locals, causing discontent and resentment. However, in regions like Risaralda in which local governments' capacity is stronger and there is evidence of good governance and planning practices those initiatives have elicited positive results for communities. This has increased the possibilities to forge sustainable livelihoods in the region.

Weak institutional capacity of the Antioquia government has come in the way to transform mining outcomes into sustainable livelihood opportunities. Inadequate infrastructure and lack of employment generation is the fostering of discontent and resentment amongst communities. The compensation for natural resources has not meaningfully achieved mining communities' development aspirations in Antioquia case due to poor planning practices and procedures in place.

On the other hand, Risaralda case differs substantially from Antioquia. The state government and other stakeholders, including mining companies and civil society actors have been able to develop adequate planning approaches to tackle mining-related issues in the region. This multi-stakeholder scenario for planning mining towns has enhanced state agencies' role in forging sustainable livelihoods in local communities, delivering infrastructure and employment opportunities. Lessons from Risaralda highlight the importance of multi-stakeholder collaboration to help governments extend the reach of its role and responsibilities. Governments alone cannot cope with existing mining impacts and mining companies and other civil society actors should provide them with support when necessary.

Finally, this paper showed the importance of planning in providing sustainable livelihood for local population in remote natural resource dependent regions of the developing countries. More than ever there is a need to take government capacity-building more seriously to adequately compensate communities for natural resource extraction and increase the possibilities to forge sustainable livelihoods for locals. Otherwise, the gains of administrative decentralization from centralized national agencies to the local government would not be able to translate into sustainable livelihood outcome at the local level.

References

- Alizar, & Scott. (2009). Working at the Local Level to Support Sustainable Mining. *Canadian Mining Journal*, 130(3), 24-25.
- Amin & Thrift. (1992). Neo Marshallian nodes in the global networks. *International Journal of urban and Regional Research*, 16(4), 571-587.

- Barrick Peru. (2008). From Subsistence Farming to Agribusiness: The Cuncashca Story *Beyond Borders: A Barrick Gold Quarterly report on responsible Mining* (pp. 10-11).
- Bebbington et al. (2008). Contention and Ambiguity: Mining and the Possibilities of Development. *Development and Change*, 39(6), 887-914.
- Bell, & Hindmoor. (2009). *Rethinking Governance: The centrality of the state in modern society*. Sydney: Cambridge University Press
- BHP Billiton. (2009). Sustainability Summary Report 2008.
- Brennan, & Solomon. (2008). Corporate governance, accountability and mechanisms of accountability: an overview. *Accounting, Auditing & Accountability Journal*, 21(7), 885-906.
- Bridge. (1999). Harnessing the Bonanza: Economic Liberalization and Capacity Building in the Mineral Sector. *Natural Resources Forum*, 23(1), 43-55.
- Camara de Comercio de Medellin para Antioquia. (2010). Minería: Potencial para Iniciativas Cluster en Antioquia *Documento Comunidad Cluster N.7*. Medellin: Camara de Comercio de Medellin para Antioquia
- Cardenas. (2011). *Poblacion Guajira, Pobreza, Desarrollo Humano y Oportunidades Humanas para los Ninos en La Guajira*. Magister en Ciencias Economicas, Universidad Nacional de Colombia, Bogota.
- Cashore. (2002). Legitimacy and the Privatization of Environmental Governance: How Non-State Market-Driven (NSMD) Governance Systems Gain Rule-Making Authority. *Governance*, 15(4), 503-529.
- Clarkson. (1995). A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *The Academy of Management Review*, 20(1), 92-117.
- Complejo Tecnológico Minero Agroempresarial. (2012). Se Busca Minería Legal y Segura en Antioquia Retrieved 20th July, 2012, from <http://ctmasena.blogspot.com.au/>
- Edwards et al. (1999). NGOs in a global future: marrying local delivery to worldwide leverage. *Public Administration and Development* 19, 117-136.
- Fiszbein. (1997). The Emergence of local capacity: Lessons from Colombia. *World Development*, 25(7), 1029-1043.
- Gibson. (2000). The Moral Basis of Stakeholder Theory. *Journal of Business Ethics*, 26(3), 245-257.
- Gibson, G. (2001). Building Partnerships: key elements of capacity building - An exploration of experiences with mining communities in America Latina- (Vol. 33): Mining, Minerals and Sustainable Development project of International Institute for Environmental Development.
- Hamann et al. (2005). Local Governance as a Complex System*: Lessons from Mining in South Africa, Mali and Zambia. *The Journal of Corporate Citizenship*(18), 61-73.
- Healey. (2006). Transforming Governance: Challenges of Institutional Adaptation and a New Politics of Space1. *European Planning Studies*, 14(3), 299-320.
- Hilson. (2006). Championing the Rethoric? "Corporate Social Responsibility" in Ghana's mining. *Greener Management International* 53.
- Hood. (1991). A Public Management for All Seasons? *Public Administration*, 69(1), 3-19.
- Hood. (1995). The "New Public Management" in the 1980s: Variations on a Theme. *Accounting, Organizations and Society*, 20(2-3), 93-109.
- ICMM, I. C. o. M. a. M. (2003). 10 Principles Retrieved February 23rd 2011, from <http://www.icmm.com/our-work/sustainable-development-framework/10-principles>
- ICMM, I. C. o. M. a. M. (2005). Community Development Toolkit Retrieved from <http://www.icmm.com/page/629/community-development-toolkit>
- International Organization for Standardization. (2010). ISO 26000 Guidance on Social Responsibility (Vol. 26000, pp. 106). Switzerland
- Jenkins, & Yakovleva. (2006). Corporate Social Responsibility in the Mining Industry: Exploring Trends in Social and Environmental Disclosure. *Journal of Cleaner Production*, 14(3-4), 271-284.
- Lahiri-Dutt et al. (2009). "How Can Revenues from Natural Resources Extraction Be More Efficiently Utilized for Local Sustainable Development?". *Natural Resources Forum*, 33(3), 245-249.
- Loza. (2004). Business-Community Partnerships: The Case for Community Organization Capacity Building. *Journal of Business Ethics*, 53(3), 297-311.
- Mate. (2001). Capacity-Building and Policy for Sustainable Development Networking. *Minerals & Energy - Raw Materials Report*(16), 3-25.
- Minnery. (2007). Stars and their Supporting Cast: State, Market and Community as Actors in Urban Governance. *Urban Policy and Research*, 25(3), 325-345.
- Rio Tinto. (2011). Communities, from http://www.riotinto.com/ourapproach/17215_communities_17354.asp
- Sistema de Información Minero Energético Colombiano (Cartographer). (2010). Distritos Mineros Retrieved from <http://190.90.10.157/Distritos%20Mineros/>
- Tracey et al. (2005). Beyond Philanthropy: Community Enterprise as a Basis for corporate citizenship. *Journal of Business Ethics*, 58.
- UNDP (1997). [Capacity Development -Technical Advisory Paper 2].
- UNDP, U. N. D. P. (2011). Capacity development Retrieved June 23, 2011, from <http://www.beta.undp.org/undp/en/home/ourwork/capacitybuilding/approach.html>
- Veiga, Scoble, & McAllister. (2001). Mining with communities. *Natural Resources Forum*, 25(3), 191-202.

What's Arabic for 'Charette'? Public Participation in the Baniyas neighborhood of Abu Dhabi

Surajit CHAKRAVARTY, Alhosn University, UAE

Meera MANSOORI, Alhosn University, UAE

Meera SHEHADEH, Alhosn University, UAE

1. Introduction

Public participation is a necessary part of due process in planning exercises in the United States and most liberal-democratic countries. In recent times public participation has become a part of the strategy of urban local governments in the United Arab Emirates. Abu Dhabi's Urban Planning Council (UPC), for example, has started using public participation in most of its projects. The reason for this sudden spurt of interest in high-visibility participation workshops is a matter of speculation. This paper examines the meaning of participation in Abu Dhabi, the processes involved in conducting participation, people's attitudes towards it, and the way it is constructed in a non-democratic context.

The United Arab Emirates was formed in 1971 with Abu Dhabi (city) as its capital. The country is a federal union of seven Emirates, with Abu Dhabi (Emirate, which includes the city of the same name) in a leadership role since it dwarves the others in size and resources. The local planning agency – Urban Planning Council (UPC) was formed as recently as 2004. Before that planning was carried out entirely by the Abu Dhabi Municipality (ADM) in collaboration with consultants, as needed. After the formation of the UPC, the functions of the ADM were restricted to plan implementation and enforcement.

The economy of Abu Dhabi is based primarily on oil and natural gas exports. Real estate, retail, financial services and tourism also play important roles. Over 80% of the residents of Abu

Dhabi are expatriate workers with no route to permanent residence or citizenship. Construction of the city began after independence. Some of the older areas, now about four decades old, and having been subjected to extreme weather conditions during that time, are in a state of disrepair. One such suburb is the Bani Yas neighborhood.

In recent times, local agencies involved with urban planning, have begun incorporating public participation into their process. It is remarkable that this is happening within Abu Dhabi's political context. It also raises questions regarding the purpose and nature of participation, and how it is reconciled with the local political culture.

Research questions

This research project is guided by the following questions. (i) What is the nature and role of public participation in Abu Dhabi? (ii) How is the idea of "participation" framed within a non-democratic political context? (iii) What can be done to improve the effectiveness of public participation in Abu Dhabi?

Public participation in Abu Dhabi

Abu Dhabi Citizens and the Sheikh

The Abu Dhabi government has allowed public participation at various scales. The ruler generally is sensitive to the needs of the people. Representatives of the government interact with the public in various forums. In Abu Dhabi, Sheikh Khalifa bin Zayed is represented by the Executive Council of Abu Dhabi. The council lays down public policies and development plans. It also ensures that these policies and plans are effectively implemented. In order to ensure that this is achieved, the council listens to the views of the citizens and incorporates them into the

final decisions it makes. The council is chaired by Abu Dhabi's Crown Prince (Abu Dhabi Government, 2013 b).

Abu Dhabi Urban Planning Council (UPC)

The Abu Dhabi Urban Planning Council (UPC) has begun using the idea of *majlis* to collect public opinion regarding planning. The Majlis is basically founded on tribal customs. UPC, under the leadership of Sheikh Mohammed bin Zayed, usually comes to the Majlis in order to meet the citizens. The Majlis provides a platform through which the citizens freely interact with their leaders. This ensures that the government enjoys the support of the citizens. In the Majlis, the citizens are normally allowed to raise their concerns to the government. These can be concerns of both personal and broader interests. The citizens are also allowed to give their views concerning what they think should be done in order for their interests to be met. It brings about a certain degree of consensus concerning the planning decisions to be adopted by the government planners. The needs of the citizens end up being incorporated into the planning and development decisions made by UPC. This way, the public participates in the planning and development of their emirate (Abu Dhabi Government, 2013 a).

Shahama Majlis

One such *majlis* was held in the suburban area of Shahama in June 2008. The *majlis* was held inside a tent. This particular *majlis* brought together the residents of the Shahama and Bahia. This region is a collection of four neighborhoods. These are: New Shahama, Old Shahama, New Bahia and Old Bahia. These places are inhabited by Emirati Nationals who live on residential plots granted to them by the UAE government. About 25,000 people live in these neighborhoods. During the Majlis, the residents of Shahama and Bahia engaged with both local and international planners in order to determine an effective future vision for the region. Men,

women, youth, children, the elderly, shopkeepers, teachers, widows, widowers, and other citizens of different socioeconomic and political categories all participated in the meeting. They voiced their issues and went as far as giving possible solutions to the issues. After lunch break, the local residents and the planners who had attended the meeting joined hands in coming up with a master plan for the planning of the region. They shared, prioritized and changed various ideas. Some of the ideas which were deliberated during this particular Majlis included provision of affordable housing, lighting of streets and improvement of transportation, provision of recreation facilities and among others. Both local assets and local issues were taken into consideration by the planners and the local residents. At the end of the Majlis, the planners came up with a “consensus plan” which could be used in guiding the planning of the Shahama and Bahia region (Gudaitis, 2010).

Al Ain Majlis

Another Majlis which was held recently in Abu Dhabi was the one which took place on May 2011 at Al Ain’s Al Hil. The residents of this region signed an allegiance document which was presented to the Presidential Court and the UAE government. Although this particular Majlis tends to differ from the one which was held at Shahama, it needs to be pointed out that the demonstration of loyalty to the leader of the UAE shows that the residents of Al Ain are supportive to the governance of their emirate. As a result, they feel represented in the development plans adopted by their government. This is unlike in a case where the citizens are disloyal to their leadership. Under such circumstances, the citizens feel that the government has left them out of crucial planning and development decisions it adopts (Raafat & Hoath, 2011).

2. Case background

The Bani Yas neighborhood

Baniyas area is an old area that has houses that were built in the first wave of construction after independence in the 1970s. Many of the neighborhoods and houses retain their old configurations, even though large parts of the surrounding areas have been redeveloped. The area also maintains original demographic composition, which was brought about by the system of land distribution, allowing each (extended) family to occupy an entire compound for all the members of the family. All families of the tribe were able to occupy their own compounds, allowing close ties both within families and within the tribe. Since its construction the area has not been improved and many parts have fallen into disrepair.

During the 1960s Bani Yas used to be the resting area of the Sheikh when travelling between Abu Dhabi and Al Ain. Highway E22 happened to be the first asphalted roads constructed in the Emirates in the 1960s. The revitalization master plan of the Baniyas started in the 1970 and had gone through many phases. Community facilities and retail were built in 1970s and later in 1989 public buildings were constructed for the use and service of the general public. Recently the Government of Abu Dhabi officially introduced a land marking initiative to build an infrastructure one of its kind that encompasses everything the general public has been waiting for a long time (Baniyas Revitalization Master Plan 2011).

The People (Bedouin)

The word or term Bedouin or Badaw is an Arabic word and it means desert dweller or dwellers or settlers. The word Badaw could also mean plain or nothing meaning there is nothing in the desert. But the Bedouin people who are proud and masters of desert proudly had lived in what is today called United Arab Emirates for centuries (Baniyas Revitalization Master Plan 2011). The Bedouin people are Arab and are found in the United Arab Emirates, Kuwait, Qatar,

Saudi Arabia, Oman, Yemen, Eritrea, Sudan, Egypt, Libya and other Middle Eastern countries. As elsewhere in the UAE, the social composition of Baniyas is composed of the so-called local people or the Arab Bedouin, Indians, Middle Eastern and African. According to a 2005 report the population of the city of Baniyas comprises 79% UAE or Arabs, 15% Asian born Asians, 5% of an African origin (Baniyas Revitalization Master Plan 2011 p.1).

The 2011 Revitalization Master Plan shows that at the moment the population of the city of Baniyas is 68,200. Furthermore, the document shows that there are 2,779 vacant residential plots and if the total occupancy capacity added together the population of the City of Baniyas would have been 85,900 people. The Revitalization Master Plan of 2011 once again stratified the age group of the City of Baniyas in which 71% are less than 30 years of age—which again 47% of the stated percentage are less than 20 years of age or younger. Therefore according to this calculation, the population of the Baniyas is less than 25 years. Furthermore, 36,000 of the city population which is equal 58% are from the UAE. As far as labor force goes, 63% of Baniyas are working people and age working age is stratified between 16 to 65 years old. In addition, the document shows 31,200 of the city population are engaged in active work. Meanwhile, 11% or 4,700 of the city population are school age residents (Revitalization Master Plan 2011 p.4).



Land Use

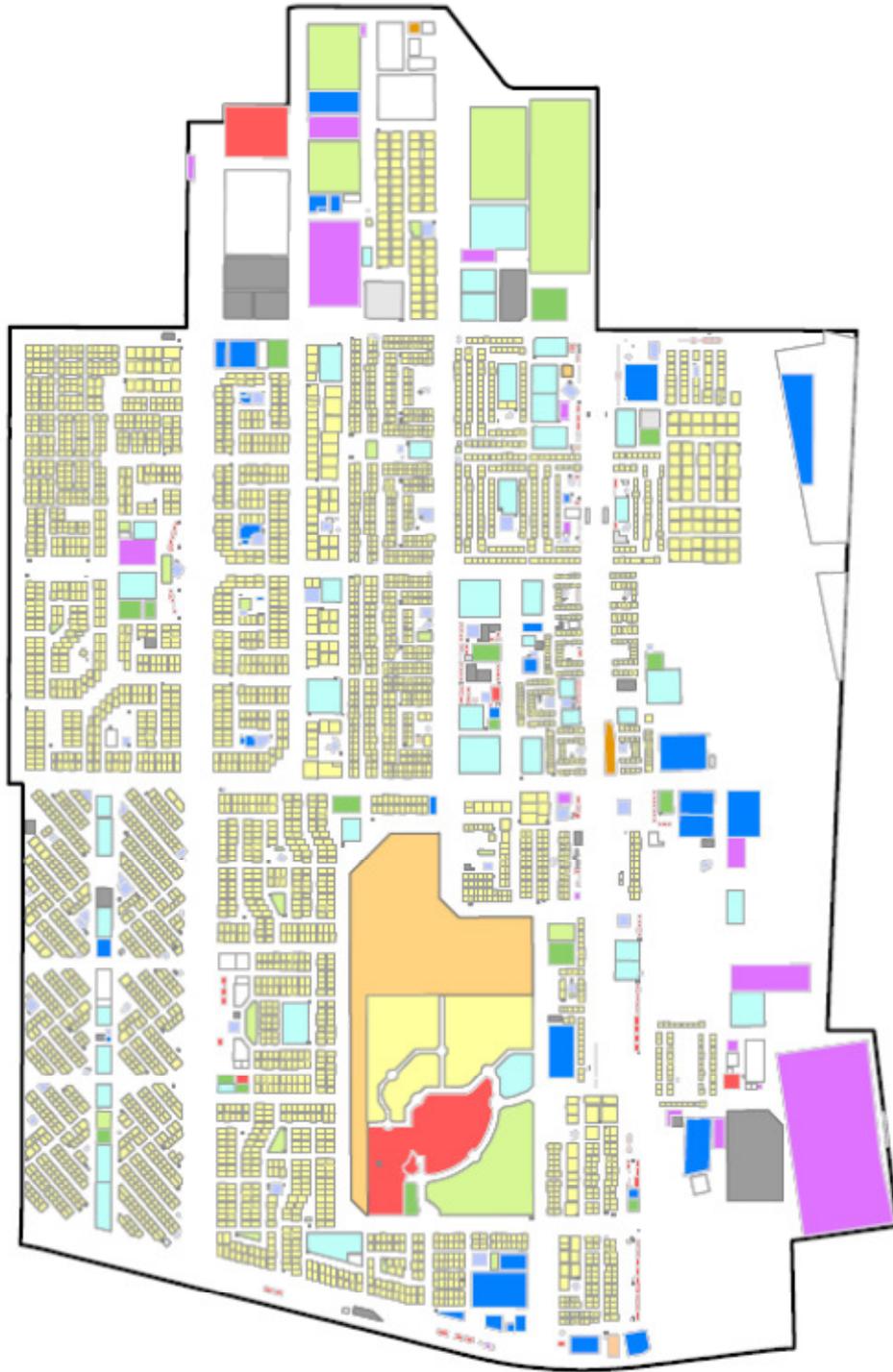


Figure 3: Bani Yas Land use map. Source: Abu Dhabi Municipality, 2012.

Baniyas area is mainly emirate neighborhood that has 6 types of land use such as, residential, commercial, mix use, governmental, school, and community center as shown in the figure below. Baniyas has old houses that are in a bad condition as shown in figure 13, and these houses are called traditional houses and they are only 1 floor but the government had allowed them to add Ground plus 2 floors—which refers to a second story level building. The commercial are located in the two sides of the main roads as shown in figure 13, and it has multi types of uses such as clinic, restaurants, trailer, and car shops.

Baniyas has a center place which is called Souq Al Baladiya where people gather to get their needs and wants such as going to restaurants, printing shops, salons and much more. These areas are mainly mixed with commercial and mix use land use, which are 3 floors. There are schools which are distributed all among Baniyas neighborhoods with different categories primary and secondary. In addition there are private and public schools.



Figure 3: Old Emirate House



Figure 4: Commercial building that on main street (Abu Dhabi Al Ain Street)

In addition, there are multi governmental uses in Baniyas such as Baniyas municipality, Baniyas police station, etc as shown in the figures below. Baniyas have community centers such as, lulu hyper market, Yas market, Baniyas co-operation, two malls (Mafraq Mall & Bawabat Al Sharq Mall), and green market.

As can clearly be seen from the above map, the Baniyas Streetscape are not designed for pedestrian friendly, to the contrary they are designed for vehicles uses. Once again, as shown in the map below the sidewalks are disconnected and there is no clear path. The streets are not safe to move from one block to another because there are a lack of sidewalks and connections.

Bani Yas parks

Baniyas areas have one main park which is divided into two areas one is designated for family and the other one is for ladies and between them there is a wall as a buffer. This park is located at the main entrance to Baniyas Abu Dhabi Al Ain road. There is one park in Baniyas which is divided into two family parks and Ladies Park. The entrance to the park is by payment for

both parks. In Ladies Park, male are allowed to enter the park but they should be less than 8 years old to enter the park. While entering to the parks the direction is clear and the view is clear from the top while walking. They have foundations, and the games are been spread randomly and there are two kinds of games swings and a slider in which such size is not enough to fit a number of people which is usually designated for one to five persons per a game. There are benches that are distributed all around the walking path, and beside it is a basket pin but there are some benches that are randomly distributed on the green space without the basket pin. The parks have two types of lighting one with one bulb and the other one with four bulbs, and they had been distributed among the park in a good way which makes the view clear.

The parks size is good for the human scale, the stairs in ladies park is unsafe because it sharp and unsafe for old ladies. The parks design is grass and tress which looks like a natural design, and there is lack of landscape, and shaded area. The design of the benches is so simple that it doesn't encourage people to use it, and the games as we had mention is small and doesn't encourage children to play and stay a long time playing because children might get bored from it quickly. In addition, the games don't encourage the child to be excited and they are not usually helpful in thinking. The games are not designed for all ages it usually is for 3- 5 years; the swing is unsafe for the young kids because it doesn't have any belt safety. Some of the games are old and damaged and might be harmful for kids. The foundation it's not modern design and it doesn't attract children's, family and ladies. The design had a walkable path that is all around the area and usually it is been used for walking as an exercise for the ladies.

Banias Park lacks essential public services such as the bathroom, mosque, and shops. They have one bathroom but it is in a bad condition, it is located far away in the buffer area beside the park and the location is unclear. There are only two water machines and the designs

are in a bad conditions. The design of the park is simple there is no attraction in the landscape. Usually people gather at the first part of the park, because it's easy access. Because the other parts of the park are all similar and nothing special to encourage people to move from one point to another. The spirit of the park is usually a quiet place. The park lacks electronic games, which doesn't encourage or attract children to use the games.

The buffer that surrounding the park on the right side is unsafe, this buffer is close to the bathrooms, which is dark and has no lighting and no any clear direction leading to the bathroom. From winter to spring—it is the season which attracts the citizens to visit the park, especially if the weather is good. In normally days if the weather was normal usually weekend's people would come to the park, which make the park active.

3. Fieldwork

We started off our research after receiving an official letter to the senior management in the Strategic Planning division of Abu Dhabi Municipality. We were then directed to the Head of Research and Studies Section. They proposed a public participation study for the redevelopment of Baniyas Park. We had meetings with them to discuss preparation of promotional materials, advertisements, and scheduling necessary tools and props. To continue the workshop in a legal way we had to get permission from BaniYas Police Station. We received this permission by writing official letters explaining the purpose of the exercise.

During the course of several meetings with Abu Dhabi Municipality we discussed the locations where the workshops would be held. It was decided that Bawabat Al Sharq Mall, Al Mafraq Public School, Baream Private School, and Bani Yas Parks would be the best locations. The Municipality also approved on our survey, poster, and consent form.

Our next step was to get approval from the mall managers for setting up the workshop. We met with the manager, Mr. Ahmad and discussed the tools and materials that would be used during the workshop. They provided some materials for us to use such as tables, chair, and an appropriate location for our workshop which would be ideal for us to use.

The next step was to contact the school. To do this, we had to get permission from Abu Dhabi Education Council. We contacted them directly, in February, 2013. They requested us to provide them with a copy of our survey, schedule, CV, passport, report for our project, and official letter from Abu Dhabi municipality. This took too long which inevitably delayed the set-up of our workshop. After approximately two months, we finally received the approval on 21st April, 2013.

We carried out extensive interviews, survey and workshop across Bani yas and collected key information and data through statistic and maps, surveys, interviews, drawings, workshops, photographs and observation. We then compiled the information and analyzed it and according to it we wrote the recommendation. The analysis gave us an idea of what the majority of people would like to have in the park and the way it should be designed. We observed that there are a lot of people giving positive response. Almost everyone liked the idea of public participation and believed that it must be carried out in their area for every development. Public participation, as we noticed is very important for every development. It provides vital information to the planner in regards to public feedback and reviews. Since the public is the end-user, they must be included in the planning as it provides key information about what they would like to change in the plan.

Workshop at Bawabat Al Sharq Mall

Workshop Day 1

The workshop has started on 14th February 2013 in Bawabat Al Sharq Mall, It included two durations, the noon duration which included two sessions. The first session from (1.30 – 2.00) and the second session from (2.30 – 3.00). As for the evening duration it included four sessions, where the first session started from (4.30 – 5.00), the second session from (5.30 – 6.00), the third session from (7.00 – 7.30) and the last session from (8.00 – 8.30).

The first session:

Was opened with few number of people; three individuals during the first half hour. The first person was as follows: he expressed his admiration for the project and his support to the idea of development and that it is worth to consider it. His suggestion was a root development of the park through: 1) Improve the appearance of the park; trees, increase the number of games, variation in the form of games, and the quality of usage. That is the games should be varied in terms of shape and size for different age groups: one year old games and older children games. 2) To improve the services of the park in terms of hygiene of public facilities; like toilets or praying room by employing a competent employee for cleaning throughout all the working hours of the park. Restaurants 3) Provide restaurants in both the family park and the ladies park to facilitate the matter for the visitor, as an order delivery from an outside restaurant consume long period. 4) The park should be divided by placing electronic games in one area and another area for smaller children. 5) There should be specialized places set for the barbeque and other places to enjoy the nature, in addition to other quiet places.

The second person was an Emirati woman who was excited for the subject and was very encouraged to participate, where she started by introducing herself and how she has a trading license "The creative women" (to explain this kind of business we must refer that the Emirate of Abu Dhabi in coordination with Abu Dhabi Chamber of Commerce has provided unique trading license for The creative women who has a heritage business or small trading business as support from the country to help women in the trading business). Later she started spotting the light on Abu Dhabi Park and the ideas for (Al Mushref Park Abu Dhabi) for its spacious area and how they go to it when having small parties, birthdays, and family gatherings. In addition, she called on the importance of taking care of providing services that help people especially women in the ladies park and to be concerned in fulfilling their desires through the provision of sports walkway in the park to assist the woman in practicing sport, especially the Muslim woman who needs a unique special place for women only and the park is a good place to do sports and to practice it.

Furthermore, it spotted the light on providing sports club in the park as there is currently no women sport club in Baniyas area, which would in turn help the woman in practicing sport. Nevertheless, she also asked for the provision of a salon for women to save time. 1) Provide a small supermarket and provide a swimming pool for children and adults and have a facility to teach them swimming. And make the park suitable for all ages. From their perspective: through the provision of initial things for woman of such Gym, Salon and a place to care for children them in a place like the park would stimulate the woman to come and visit the park, for it facilitates doing everything in one place- the park, which can be a park and a secured place and a place dedicated to women which will not keep the woman away from shopping, entertainment and exercise her hobby. Also, she praised the presence of restaurants in the form of booths in the

park in a beautifully heritage shape of food and drinks to support woman in performing her work inside the park through giving the opportunity to the "The creative women" to perform their business inside the park in an orderly manner by putting the unified logo of the park which represents the region. The logo should be distinctive and even restaurants should be using the same logo. Through the provision of Heritage Club which collaborates with the "The creative women" with the cooperation of Abu Dhabi Chamber of Commerce to support businesswomen in participating their business in this place dedicated to women and families; which encourage people to visit the park.

Provide manpower for Henna through "The creative women" who can provide the ladies who do henna or any other service. 2) Provide working women in the park .3) provide security in circumstance of lost child or thing through the development of the trust funds 4) Participation of the school in the events of the park. 5) Providing events throughout the months with cultural and heritage diversity 6) Providing educational games specialized in children's education and educational places, led by specialized guides; such as swimming 7) Provide Gulf and Arabic restaurants at reasonable prices 8) Having coffee shops but prevent smoking cigarette and anything detrimental to health. 9) Provide a special logo for the Park 10) Give a special feature for a garden. 11) Maintain the cleaning operation through the distribution of trash baskets in the park 12) Provide special places to have parties.

Third person: called for the need for development and expressed his appeal to the idea of development. 1) Attention to the hygiene of public utilities in the park. 2) Attention to the provision of different games. 3) Expansion in the facilities of the park.

The Second session:

Included two people, starting with the British woman who has never visited the park but was interested to participate to have an idea about the matter as she was interested in residing in BaniYas residential project. 1) She has seen that the project was important and necessary to be developed and stressed on the importance of having events for children and adults. 2) She has also said that the existing components in the questionnaire were excellent and encouraging to visit the park. The second person was a resident of Khalifa B: he had visited the park and thinks that it is important to maintain the park in terms of hygiene facilities and games. 3) The need to have water games. 4) Provide swimming pools. 5) Increase labor working times in the garden. 6) Lack of labors in the toilets. 7) The importance of the presence of restaurants in the middle of the park. 8) The presence of gym in the park and to be safely open. 9) Provide places for barbeque. 10) Provide a praying area for women in the family section. 11) Provide various restaurants. 12) Provide shaded places. 13) Put safety features in fountains. 14) Provide water coolers in the park and to distribute them inside the park.

The third session:

It started with one person only who lived in Baniyas suburbs. He thought that the importance of the development of the park is through: 1) Provide necessary games for the entertainment of children of various shapes to encourage the children to play and that there are not enough games currently in the park and they are not enough for the number of children especially at the weekends. The park is considered as one of the kind in the region. 2) To provide praying area for women in the family section, and to provide cleaning labors in the park around the working hours of the park. 3) Extend the working hours of the park especially at the

weekends and holidays period with the facility of opening the park at the noon time in the holiday period. 4) The park lack cleaning labors in the toilets. 5) There is no maintenance facility in the park for the games which are very old and not secure for children. 6) Expand the area of the park. 7) Provide water games like Yas water park to earn an income for the park.

The fourth session:

The session included four people of one family and the addressing of people was in the form of group discussion. They all called for the importance of maintaining the park and providing all services in the park. They started with the things that is lacking in the park. They have also called for the importance of prohibiting unauthorized food, where there are some people who sell food outside the park-which is not authorized by the official authorities. The food is exposed to the sun and might be expired. This poses danger on the children. They have also mentioned the unavailability of a cafeteria inside the park which facilitates the presence of those type people who take e of the situation to sell food. The other issue is the random selling operation inside the park by unauthorized women which is offensive to the general appearance of the park and is un civilized. They stressed on the importance of preventing them to do such thing for the public safety and that it is important that the municipality should monitor such activities of this category of people. To avoid this problem, it is importance to have restaurants inside the park, and the importance of providing booths for snacks under the monitoring of the municipality with relatively low prices that everyone can afford supported by the municipality.

The selling operation of "clothing" and other things should be prohibited in the park, as it is not suitable for the park appearance as it is a picnic and entertainment area. The park does not have enough games. In addition, there are no safety elements in the Games for the children.

The lighting in the park is very poor, which lacks the new civilization elements in the process of distribution of the games. The park does not contain the elements of civilization and progress. The natural look in the garden does not attract the individual and lack the presence of flowers and different types of landscapes that calms a person's psyche. The entry gate park is very small, so there is a need for expansion for the same, as the current situation does not help in realizing how many people are in the park and it allows people to enter without paying the fee of the park; which is not fair. The administration is not tuned on the mechanism of working in the park. The toilets are very remote and there are no cleaners in the women park which exists on the edge of the park and which is not used and the place is not clear to all. The lack of toilets tissue, hands soap and other necessary things. The lack of places for the elderly and people with special needs. There is no security in the park in the event of any accident or the loss of a child or a thing. The presence of an area right end of the park for women which is unused and the area is isolated, abandoned and planted with high altitude trees, which contains insects and snakes and it is an unsafe area and scary for the children, and it is isolated from the park by trees. There are two fountains in the park of large area and not secured for children, where lots of accidents have occurred. One of the most unfortunate events is when a small child fell in the fountain and died. There are no places for families to sit and no shaded areas in the park. There is no regular maintenance for the games in the park. The administration ignored many issued in the park is due to the reasons that they are unable to control people in the park and they are difficult people to deal with.

It is important to develop the park, and this project is a good project and important in the region. Among the improvements that we would like to stress are: 1) To prevent sales of Food & Beverages from the outside. Prevent sales inside the park in a randomly, uncivilized,

uncontrolled, and unauthorized by the municipality. 2) To provide places for the sale of food and beverages in the park which is authorized by official authorities at acceptable prices with the provision of restaurants in the park and provide machinery for drinks in various areas in the park with the provision of water coolers. 3) Provide toys for children at various ages with paintings that is loveable and entertaining and educational for children, which enhances the child to search, innovate and discover and this will take long time in playing instead of playing for few minutes only. 4) Provide practical games for children to motivate them to play. 5) Provide electronic games and other games that aim for the participation of parents in playing with children, which in turns the park to be a playing area for the whole family. 6) To divide the playing area in the park for ages of one year old to four years old, and an area for children of the age group five to ten years of age.

In addition to area for children above ten years old. So that the games would be targeted by different age groups. 7) Improve the appearance of the park through maintaining the landscape; flowers, small fountains that add nice voice in the park in addition to innovative decorations with modern and new ideas. 8) Distribute seats in the park in a nice and various designs. 9) The necessity to have security personnel to maintain security inside the park. 10) Provide security units in an event of emergency accidents. 11) To provide places for women like gyms in the open air and to distribute sports equipment in the park. 12) To provide new and secure electronic games for everyone. 13) To take care of having parties in the park and having shows all over the year to activate the park and to make a change and entertainment; such as the child day, mother's day, national and religious days, and drawing educational and heritage contests. 14) Encourage schools to have trips to the park and to participate the children in the entertainment activities by having visits to the park by the school. 15) Extend the working time of

the park in public holidays and weekends. 16) Use the alert equipments in the park in a civilized and non disturbing way in case of alert for a specific thing . 17) Put guiding plates in the park to facilitate the direction of people. 18) Taking care of environmental issues through having weekly care for trees and plants by spraying pesticides regularly. 19) Address the social issues in the park which is not accepted by lots of people. 20) Place plates in the park for the prohibited things by official authorities in a clear way, to avoid any complaints by individuals for prohibiting bicycles and playing with the ball in the park. In this way if the prohibition is by the municipality then there will be a sign for the penalties and the violation fees.

21) Have a uniform for labors. 22) Have a food court in an assigned area in the park that will not affect the appearance and the calm of the park. 23) Have games for special needs people and assign people to care for them. 24) Provide places to encourage the creative woman to do her business; like handicrafts, cooking, and painting. 25) The prices should be reasonable for everyone. 26) The development should be based on the priorities of everyone and serve different categories of individuals in the society. 27) The park should be in line with high criteria and standards for games, public facilities, landscapes, in secure and high quality standards that aim for the safety of everyone especially the children. 28) Proper lighting in the park. 29) Motivate the children to participate in the awareness operation in the park and how to maintain the hygiene in the park and help through the operation. 30) Provide a walking path for women and places for practicing sport, jogging, and running. 31) Provide events for the elderly in the park to share their experiences with children. 32) Provide relaxation sports like yoga and other exercises in the open air. 33) To have a specialized committee to extract the opinion of visitors regularly and meet with them in the park to take their opinion about improvements and complaints 34) the path

of the park should be clear and unconfusing for people through providing simple information about games.

The fifth session:

Included two people; one who lives in suburbs of Baniyas (Al Shamkha) which is fifteen minutes far from Baniyas. He said that the park is the only entertainment place in the region which he visits at the weekend. He also thinks that the development is a good initiative in terms of expanding and developing the park, and that our participation is a good thing. 1) The park lacks games, improper games, and the quality of the games is not good. 2) Maintain the hygiene of public facilities- toilets and praying areas. 3) Provide restaurants in the park to avoid buying from outside restaurants. 4) Monitor the administration to improve their work. 5) Provide shaded places with umbrellas and provide seating areas for families. 6) Improve the lighting system of the park. 7) Provide and improve games and electronic games 8) Extend the visiting hours. 9) Provide football field in the park in addition to various fields and playing areas. 10) Provide a gym in the park. And taking care of the general appearance of the park.

The second person: lives also in Baniyas suburbs and visits the park in the weekends as it is the closest park in the region. He said the park lacks football games and good games. The games are only for children at very young ages and not good for children over ten years of age, and even if they bring a ball to the park they are not allowed to play with it in the park, as it disturbs the people who are in the park. Therefore there should be special area assigned for playing football. Provide electronic games in the park. Provide restaurants and coffee shops in the park. Distribute machineries for selling beverages inside the park. Assign places for barbeque. Assign places for families. Provide places for games and seating areas.

The sixth session:

Included a group of young men of the age group 13- 16, some of them participated in the discussion and gave their opinion and answered the poll and others gave their opinion only. They were very eager for the idea and their priority was to have a football field in the park. Because playing football in the park is not allowed. They also stressed on the importance of changing the administration in the family section, who do not respect young men and they think of them as children who wants to foul around and create problems. They complained of the treatment of the guard who swears with bad words and yell at them and threaten them with the police. Their opinions includes: providing water games, contests inside the park. Extend the working hours of the park. Encourage the schools to have trips to the park. Provide seats in the park. Improve the parking areas around the park. Improve the lighting system in the park. Provide games like train, and rental bicycles in the park. Provide a swimming pool for the adults and children. Provide events in the park.

The number of participants was 18 people of different ages, nationalities, residents of Baniyas and its suburbs. The beginning was very encouraging for our project, there were various ideas and opinions about the subject and we have seen that this subject was a main concern for the residents and nonresidents of Baniyas area, which encouraged us to improve our performance and encourage them to participate. It is true that there were some session which did not include lots of people, but this is not a sign of their lack of concern about the subject, it is rather a beginning that requires more time for the people to understand the idea and participate.

The workshop continued for two more days yielding rich information in the form of quantitative and qualitative data.

6.2 Workshop at Bani Yas Ladies Park

6.2.1 Workshop Day 1

The second place we have done the workshop is Baniyas Ladies Park for two days during the weekend, Thursday and Friday. During the preparation for the workshop in the park on Thursday, there was also a workshop and awareness program by the municipality in the department of community service in the Municipality of Abu Dhabi. Their campaign was interested in raising awareness about the importance of maintaining the park and services in several parks in the emirate of Abu Dhabi, including Baniyas Ladies Park. We thought it was good to participate with them to avoid any contradiction in the workshops. After conversation with workers in the program and knowing what the campaign is about, including that they have time to talk with parents about Baniyas Park and their opinion about improving the park. So we agreed to participate with them in the workshop and to participate in the workshop with parents in polling their opinions about Baniyas Park and the ways for its improvement.

The duration of the program lasted for two hours; a TV show for children and parents as an awareness program to maintain the cleanliness and safety of parks in the emirate through the identifying the children's top priority in the park then had questions for the participation of children, then they moved to the free Atelier to express their opinion about parks through drawing. The third session was for the parents and their participation in the development of the park. We participated in this workshop by introducing ourselves to the parents and identifying the mechanism of our park and our study. The audience was large and enthusiastic to participate. The workshop included a group of women who expressed their opinions and debate about the priorities that should be present in the park and things which must be avoided. The number of

people varied between twenty to thirty people, of who participated and presented their views while others participated in the questionnaire only and others did both things.

6.2.2 Workshop Day 2

This day was accomplished with the help of the municipality, as we participated with them in the workshop session which was assigned to poll the opinions and participation of the public, in regards to their vision about the development and improvement operation of Baniyas park. The second day was different, as we made a field round to poll people's opinions for the large unexpected number of people. Controlling people today was more difficult than yesterday. Therefore, it was hard to hear them. We decided to make the field round to take the opinions on group basis.

Workshop at Bani Yas Family Park

Workshop Day 1

First group:

The first group encompassed four people- three women and one man, and their individual opinions were as follows:-

First person: of course we want to develop the park, first by providing games in the park, especially that the current games are old and few and with no change or maintenance. Improve the performance of the administration for the bad treatment of young men. Provide electrical games and provide football stadium to avoid prohibition by the administrator, especially that it is a family park-for now we are prohibited to play ball in the park. Provide restaurant in the park, as

the current one is not a part of the park. As for the hygiene, it needs improvement in terms of toilets cleanliness.

Second person: women in the family park are suffering from the unavailability of a prayer area in the park. We need the provision of praying room in the park. The hygiene of the toilets is bad as they are not clean and does not have proper ventilation. Female manpower should undertake the cleaning process. As for the entertainment element in the park it is lacked for the number of games are few and not proper for usage in terms of safety which is in bad condition and rusted. There should be new games in the park and electrical games and places dedicated for barbeque.

Third person: take care of the hygiene of toilets and provide manpower to do the cleaning process of the park and toilets around the working hours of the park, the games are old and noisy which is scary for children and annoying for people. There is no place dedicated for barbeque, therefore we need places for barbeque, and vendor machines. Set up a radio station to alarm in case of missing thing or person.

The fourth person: provide games and electrical games in the park, to be new and of various use and appropriate for all ages. Maintain the hygiene operation in the park and different facilities. Provide events like parties- educational and entertainment- in the park to improve it.

6.4 Workshop at Schools

6.4.1 The Mechanism of Workshop in Schools:

An introduction about the project and clarify the aims in ten minutes, then divide the students into groups and distribute maps to start the workshop in regards to everything needed by the workshop; park maps, transparent papers, pencils and papers for the opinion poll to start

expressing their opinions about the park for 15 minutes. Then every person start to express the ideas and discuss them in groups, then a discussion panel will be open for everyone to share ideas and opinions. Finally we conclude by the opinion poll and thank the participants and take photos if they allow us.

6.4.2 Workshop Day 1 at Al Mafraq School: Day one 29th April 2013

The workshop consisted of 25 female students who were divided into five groups and we distributed the workshop tools on them for one hour.

The first group: the students did a preliminary drawing about their visions and demands about Baniyas Ladies Park. The plan illustrated providing a walk way in the center of the park. Put entertainment games in the right side as illustrated in the drawing. Provide regular games like max flight, scissor, death train, plate. The section contained an entrance gate and in the left part also water games and theater with gate. Provide a restaurant in the park as illustrated in the planning drawing. As for the second plan, it was about the problems that they suffer from like banning older children from entering the ladies park and no discrimination among people, there should be more gates and there should be a sprayer and supervisors in the park to avoid problems and accidents in the park. As illustrated in the plan (as shown in figure 23).

Second group: the students put two plans one for the family park and one for the ladies park, the first plan included dividing the park into different sections: kids section, elder children section, with space between them, there should be ice rink in the left side and prayer area and place for parties and events. As for the right side, divide the place into three regions. The first region to be allocated for barbeque, second region for ladies gathering with coffee shop, third

region is the food court in the center of the other sections, and a fish tank in the center of the park. Provide train to transport people between sections in the park. As illustrated in the planning diagram. The second plan is for the family park, in the center of the park, there should be restaurants and coffee shops, and a train to transport people between sections to the games section, birds section, water games, and provide Sheesha for men, as illustrated in the plan. (as shown in figure 24).

Third group: the plan illustrated the division of the park and distributing services: entertainment games for children, games for elder children, modern games and a fountain with high dividers in the center of the park as illustrated in the plan. They also wished to have safety element and regulations boards and to take care for the hygiene of the toilets and expand the entrance gate. (as shown in figure 25).

Fourth group: the diagram illustrated the ideas of the students about Baniyas Ladies Park by placing security office close to the entrance and clear direction of the park, by providing clear lightings and landscape by providing more trees and flowers. Provide prayer room and restaurant section and coffee shop and games sections. Provide parking spaces outside the park as illustrated in the plan: (as shown in figure 26).

Fifth group: the students illustrated their ideas about Baniyas Ladies Park; we should have more water games, ice rink, public market, electronic games, food court, and swimming pool in the center of the park. Walk way and flowers around the park. Expand the entrance gate (two gates) as illustrated in the plan. (as shown in figure 27).

All groups shared their ideas and discussed them while focusing on certain ideas and they all shared the entertainment element for children and adults in separate sections. Provide the

safety element and female supervisors in the park. Expand the entrance gate. Attention to the hygiene of the facilities of the park. Have more services like coffee shops and restaurants. The workshop was concluded by active participation of all students and polling their opinions about our project.

School Workshops Day 2 at Al Mafraq Public School and Al Baraem Private School

The second day of the workshop in Al Mafraq School:

The workshop included twenty-five students, who were divided into groups, each group of five students and then they were given tools. The workshop started with a power point presentation for ten minutes introduction about the topic.

Workshop at AL Baraem Private School:

The workshop was for two hours in one day and included a number of female high school students and attended by faculty members. The workshop was first introduced by PowerPoint presentation about the project and about the mechanism of the workshop for students then were distributed students into groups to be discussing their opinions and discuss the opinions between students and faculty members.

4. Analysis

Analysis of quantitative data from surveys:

	Male	Female	
Q7 a	4.21	3.69	0.52
Q7 b	3.92	3	0.92
Q7 c	3.87	3.56	0.31
Q7 d	3.776	2.8	0.976
Q7 e	3.41	2.52	0.89
Q7 f	3.34	2.2	1.14
Q7 g	2.84	1.75	1.09

Q7 h	3.38	1.81	1.57
Q7 l	2.52	1.54	0.98
Q7 j	2.952	1.81	1.142
Q7 k	3.36	2.1	1.26
Q7 l	3.21	2.36	0.85
Q7 m	3.53	2.64	0.89

Table 1: Difference between opinions of genders regarding the different elements in the park.

The total is N= 303 surveys as it's shown in the table above. There are differences between the male and female opinion, in Q7(f) the males are happy and satisfied with the shaded areas but the females are not because the ladies park does not have any kind of shaded areas as there is lack of trees that help provide shade to them. In Q7(g), the males are satisfied with the games that are provided in the family park but the ladies are not because they have fewer games and some even have been removed or damaged. Q7(h) is about the prayer room in the park as there is only one provided for the males only. In Q7(j) and Q7 (k) the females are not happy with the current services the hygiene and cleanliness in the bathrooms in the ladies park.

	Male	Female	
Q8 a	1.35	1.33	0.02
Q8 b	1.55	1.69	-0.14
Q8 c	1.44	1.69	-0.25
Q8 d	1.51	1.41	0.1
Q8 e	1.67	1.88	-0.21
Q8 f	1.576	1.78	-0.204
Q8 g	1.79	1.87	-0.08
Q8 h	1.46	1.74	-0.28
Q8 l	1.792	1.8	-0.008
Q8 j	1.59	1.74	-0.15
Q8 k	1.38	1.37	0.01
Q8 l	1.87	1.66	0.21
Q8 m	1.33	1.28	0.05

Table 2: Difference between opinions of genders regarding their preference for the availability of certain facilities/amenities in the park.

	Male	Female	
Q9 a	1.07	1.08	-0.01
Q9 b	1.31	1.32	-0.01
Q9 c	1.075	1.05	0.025
Q9 d	1.05	1.06	-0.01
Q9 e	1.06	1	0.06
Q9 f	1.08	1.05	0.03
Q9 g	1.3	1.1875	0.1125
Q9 h	1.09	1.15	-0.06
Q9 i	1.02	1.01	0.01
Q9 j	1.08	1.15	-0.07
Q9 k	1.2	1.04	0.16
Q9 l	1.18	1.16	0.02
Q9 m	1.05	1.04	0.01
Q9 n	1.03	1.02	0.01

Table 3: Difference between opinions of genders regarding the type/number of events one is willing to attend if organized in the park.

	Less than 18	18 - 29	30 - 39	40 - 49	50 years more	
Q7 a	3.58	4.12	4	4.21	4.75	-13.5
Q7 b	2.84	3.68	3.57	4.05	4.75	-13.21
Q7 c	3.74	3.67	3.55	4.17	4	-11.65
Q7 d	2.93	3.35	3.18	4.05	4.5	-12.15
Q7 e	2.86	2.83	2.92	3.47	4.5	-10.86
Q7 f	2.47	2.87	2.62	3.17	3.75	-9.94
Q7 g	2.05	2.29	2.35	2.44	3.75	-8.78
Q7 h	2.31	2.89	2.09	2.35	4.5	-9.52
Q7 i	1.88	2.19	1.72	1.77	3.25	-7.05
Q7 j	2.25	2.44	2	2.7	3.75	-8.64
Q7 k	2.42	2.76	2.53	3.35	4.5	-10.72
Q7 l	2.65	2.94	2.38	2.78	4.25	-9.7
Q7 m	3.1	3.18	2.58	3.05	4.5	-10.21

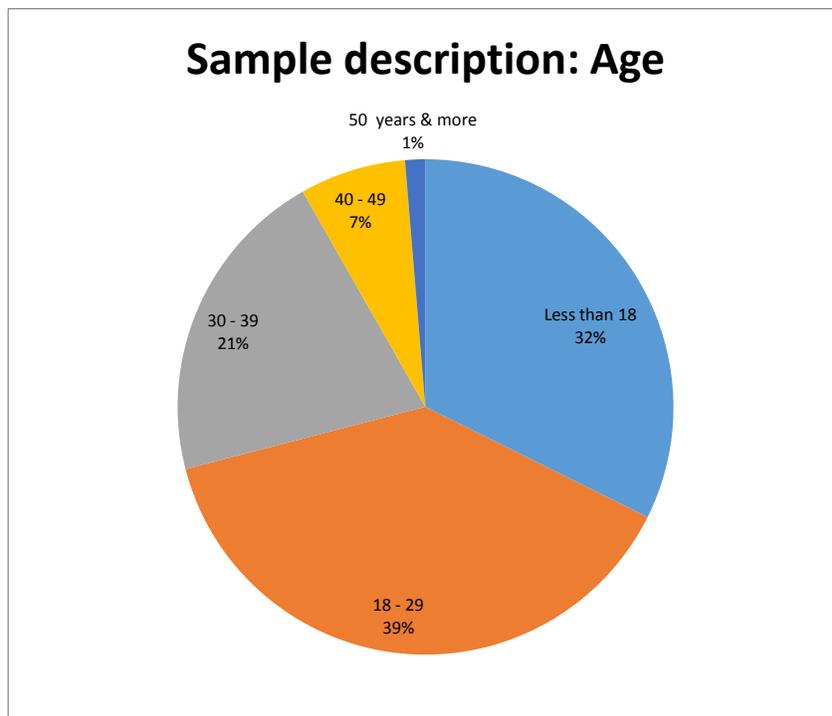
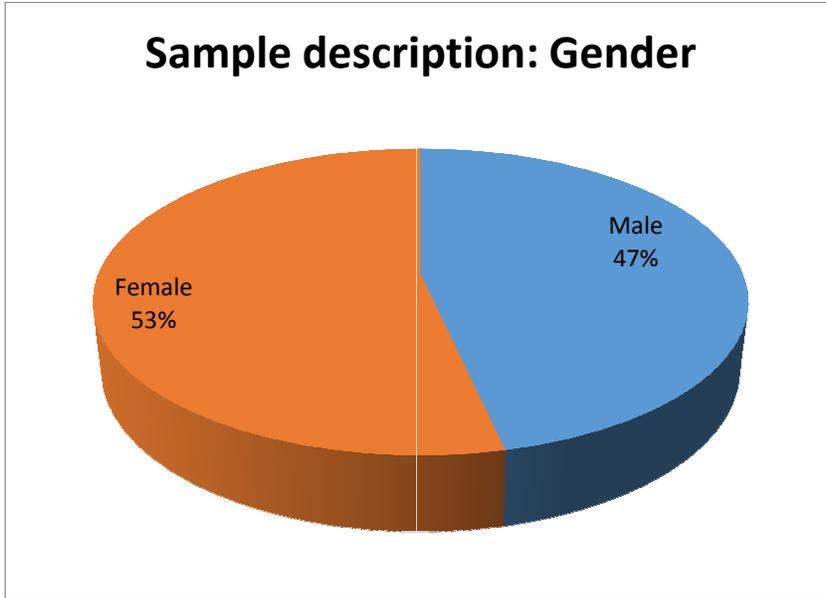
Table 4: The difference between opinions through different age categories regarding the different elements in the park.

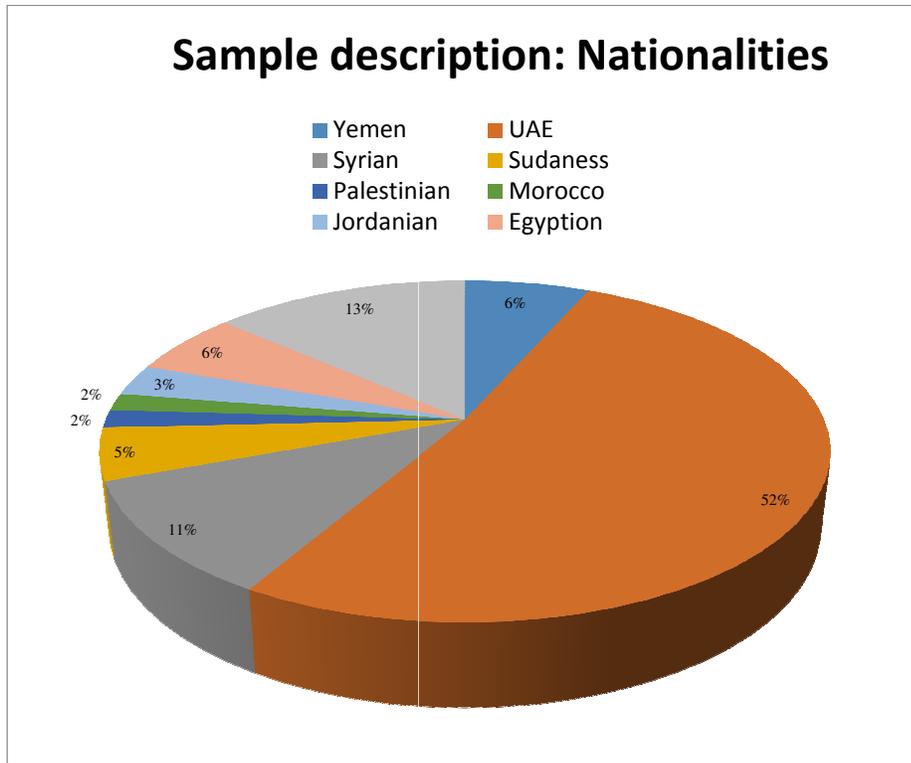
	Less than 18	18 - 29	30 - 39	40 - 49	50 years more	
Q8 a	1.33	1.36	1.35	1.38	1	-3.76
Q8 b	1.6	1.54	1.69	1.89	2.25	-5.77
Q8 c	1.65	1.55	1.5	1.46	2	-4.86
Q8 d	1.36	1.29	1.73	1.8125	2.5	-5.9725
Q8 e	2.01	1.71	1.62	1.58	2	-4.9
Q8 f	1.51	1.69	1.96	1.58	2.5	-6.22
Q8 g	1.68	1.9	1.83	2.05	2.5	-6.6
Q8 h	1.72	1.52	1.58	1.82	1.5	-4.7
Q8 i	1.68	1.76	1.94	2.29	1.25	-5.56
Q8 j	1.78	1.52	1.73	2	1.25	-4.72
Q8 k	1.31	1.33	1.44	1.76	1.5	-4.72
Q8 l	1.5	1.82	1.98	2	1.5	-5.8
Q8 m	1.16	1.3	1.4	1.72	1.5	-4.76

Table 5: The difference between opinions through different age categories regarding their preference for the availability of certain facilities/amenities in the park.

	Less than 18	18 - 29	30 - 39	40 - 49	50 years more	
Q9 a	1.17	1.02	1.02	1	1.25	-3.12
Q9 b	1.34	1.22	1.38	1.71	1.5	-4.47
Q9 c	1.1	1.06	1.01	1	1	-2.97
Q9 d	1.12	1.03	1	1.05	1	-2.96
Q9 e	1.04	1.01	1.04	1	1.25	-3.26
Q9 f	1.1	1	1.12	1.05	1	-3.07
Q9 g	1.22	1.23	1.26	1.25	1.25	-3.77
Q9 h	1.23	1.1	1.02	1.05	1	-2.94
Q9 i	1.02	1.01	1.02	1	1	-3.01
Q9 j	1.13	1.11	1.08	1.125	1.25	-3.435
Q9 k	1.13	1.14	1.04	1.06	1.25	-3.36
Q9 l	1.2	1.14	1.225	1.11	1	-3.275
Q9 m	1.04	1.07	1.04	1	1	-3.07
Q9 n	1.03	1.02	1.04	1	1	-3.03

Table 6: The difference between opinions through different age categories regarding the type/number of events one is willing to attend if organized in the park.





Answers to open-ended question on suggestion for improvement

Suggestions
Located nearby mosque, and arrange the facilities
Improve the games and clean the bathrooms
Restaurants, electronic games, clean bathrooms and a cleaner and place for "Abayas"
No
Allow children to play football
Place for children for football
football stadium, skate
I suggest that the expansion of the park there are many places is important can be used for women's sports
Entertainment programs and competitions for children, Fireworks, Dances (popular arts), al yola (tradition dance)
Provide workers to clean the park to maintain the utilities
develop the entertainment, taking care of the cleanliness, and provide restaurants and café shop
electronic games, events for special needs, Cleanliness
Improved facilities such as bathrooms, locate the mosque in a near place, improving the children's games, allocation of places for barbecue
Mosque , and repair the games
The guards behavior is unacceptable and unwelcome the visitors
Build a mosque for women

full awareness to the visitors in terms of the cleanliness and maintain beautiful places
No suggestion
Please allow playing football, and provide BBQ area
make use of each part of the park
New restaurant
I suggest to have a Special theater festivals , café shop, gym, and expand the park
Mosque, and electronic games
Cultural events, fireworks, and an orderly entry Visitors
Repair the games and increase the number of games, and provide a mosque for women's, and clean bathrooms
to be in the park café shop, mosque, fire walks, and gym
All the things listed
improve the children games And attention on the safety and security
a mosque nearby in the centre of the park, and a special day for families
Please make a train without a fee, remove the swing
Clean bathrooms and provide a supervision cleaner, and make the mosque closer and put water sprinklers to moisten the atmosphere
Upscale cafes, jogging track, security, time dedicated to women
Security, time dedicated for men and family, cleanness, upscale café
Provide First Aid shop in simple cases (child injured during playing, fainting, etc.)
Music, football, cricket
Security, entertainment games , place for praying
More attention to the existing facilities within the park, Impose financial penalties on those who do not abide by the rules of hygiene especially women's bathrooms, Increase the number of workers, Barbecue places.
Lighting is not enough, BBQ area, develop the games, Attention to cleanliness of facilities
Please make a mosque, train, electronic games with free fees
we want Coffee Shop
New Games
Football stadium
Football Stadium , water land, prayer room , bathrooms, and formula 1
Grocery 24 hour
Increase the games, increase the timing , and increase the Recycle Bin
All had been mention above, only please make the entrance free and distribute water while there are visitors.
Wonderful just need to add more lighting
Clean bathrooms, mosque, horses, and emphasis on boys do not enter the park
Fees free for entrance, Security, worker cleaner
Cars train
develop the electronic games
Electronic games - Cultural events and concerts and educational events
Football stadium only for young people
Small trains, electronic recycle bin, electronic device for lost children
May Allah give you wellness everything is very good
the guards gate are not friendly dealing with visitors hope so that they be more friendly

we hope that the administration park improve the level of treatment with the visitors at the gate
The Guard don't care about the children and they deal roughly with visitors
Fireworks, contests, and festivals
Attention to the cleanliness of toilets and cleanliness of the park, set up a mosque for women
Games, BBQ area , gym
it's a pretty garden just need system and cleaning from kids and some care
Mosque for ladies, BBQ area, football and bicycles area, kids games.
the guard doesn't deal friendly with the visitors
Provide security cameras and improve the area especially the entrance
change the public announcement
Games, BBQ area , gym, restaurants
Kids games, women's mosque , cleaning services
Kids games at the center of the garden only, the voice of the gate is annoying, too many rubbish
Please cancel the guard at the door of the garden because its uncivilized view
Please pay attention to the bathrooms, Remove of the game that made a sound at entrance of the park, change the public announcement because the sound is not clear, there is no space or place for bbq.
Change the public announcement because the sound is not clear and securing better water
Plays
Cultural
Bowling
Give each visitor a map of the garden
A space for bikes ride
No suggestion
Swimming pool and games
Volleyball games
Flowers
Support the park awareness programs to serve the masses to take care of this program
Increase the electronic games
Expand the park to enjoy the park
Expand the entrance door, Cafeteria and restaurants
Please have a library corner
Sabouni Stadium
expand the park, put many restaurants
provide mosques for prayers, water games and electric, Cafeteria (McDonald's)
Swimming pool, water games, restaurants , old souq , entertainment games for adults
entertainment games for adults, Cafeteria and restaurants
Give wellness
improve the park
water games, Ice Skating Rink, entertainment games, Tomboys are not allowed to enter the park
Restaurants, electronic games and water games, clan bathrooms, festivals, prayer room, expand the parking, police women
games and clean bathrooms, souq for famous brands and change the name in to bani yas land and provide

restaurants and coffee shop and lots of games and flowers similar to Flower Garden in Dubai
clean bathroom and improve, a train that goes around the park, expand the park, provide buses for ladies with free fees, and Pest Control
Restaurants, global village, and an area for party (close area)
Sports fields and recreational games, restaurants and cafes, develop Cleanliness and bathrooms, improve the appearance of the garden
provide sport fields, improve the cleanliness of the park and take care of the park and work on it and provide games for summer and spring
clean bathroom, attention on the appearance of the park, the Women tighten security
Expand the park, park cleanliness, and provide restaurants and prayer room.
make the outside place safer for children and adults and improve the appearance of bani yas garden
Improve the bathrooms, a mosque, increase number of parking, and increase the number of security.
amendment the facilities and clean bathroom and increase the games in the park
In addition to the clinic the garden, put more security in the
Ladies Saloon
Electronic games, bicycles, expand the park, provide buses for ladies.
No Suggestion
Restaurants, Football stadium, cinema, parking, and water games
Security, entertainment games
to have in the park mosque, electronic games, and gym
don't switch off the lights earlier
cleaner bathrooms, Area for stuff, and restaurants inside the park
Restaurants, electronic games, and prayer room
Construct a gym for ladies or a club that provide all important centers, construct a " souq sha3bi" old souq
Change the games and provide or put tents for families in case of having a nap.
signification games compared to the global village
I hope that there will be a nursery building
Contests for children
Air-conditioned room
Games
New games, Entertainment competitions
Maintains the park and all what it contains
zoo, Hyde park
Fully developed
TV screen
Circus Show
Change the games and replaced with new ones
The development of games for children and perform the necessary maintenance
Increase recreational Games
Please remove the coffee shop in order to preserve the public health
Add new lighting in all parts of the park
Mosque

No suggestion
Cut the grass Regularly
No suggestion
Bring all restaurants such as, KFC, pizza huts, etc.
a specify a part of the park for ladies, and Development educational games for kids
Sort and trimming the trees of the garden and do not leave the water open
a management the follow up the requirements and the public needs, ads on TV and newspaper about the events that are going to be held in the park, the Offers for companies to do their offers in the garden
Renewal the games and replace the old pieces for safety, An area for nursery ,increase Offers for Children and Families.
expand the parking area at the family section
Repair places that are interest for tourists, a special place for sport
no signs for remembering God "Allah"
workers who have experience in dealing with the Visitors
I suggested that they repair the games and provide a train and make the place like the global village
Divide the park in to four part because its large size section for skate, Sandstone, marine, and park
Festivals and tents for sales and music event to make the park famous
No Suggestion
they should build playgrounds such as football and basketball, and they should build a skate
electronic games and sport field such as football and basketball etc. and train death
Department for animals, pedestrian corridors and sports, increase lighting, heritage
I think it would be nice if restaurants were added and perhaps have different festivals held in there as well.
Increasing the lighting in the garden
No Suggestion
Increase landscape
presents of workers clearers
Dealing with specialized companies to make new games, workers and labors, area for tradition foods and heritage stuff
I would like it to be like the other parks in terms of games
Thank you for the park
I hope that it will be implemented and give some attention
Enlarge the garden, concert halls
Change the time and extended
expand the park timing
expand the park timing
Café shop and swimming pool
Place as global village
the suggest is taking care and the system
improve the services such as the prayer room and Clearness
Games for all ages and ladies, control, provide a space for football, A small concert hall for children, gym, bathroom, Women workers for cleaning, Renal bikes, restaurant with reasonable price for all, increase the timing
rental bikes, Grocery market price, remove the trees to make the view clear, concert hall, games for all ages,

payment control while entering, provide space for football
increase the timing during the holidays, games for all ages, café, restaurant, bathrooms, prayer room, payment control while entering, allow children to bring the ball and provide a space for football
there should be a small parks in each area that serve the children daily and a Walk particular for sport
Increase the timing, games for all ages, bicycles for ladies, football, Price controls either in the restaurant or enter the park.
we support all ideas, but must take into account the entry fee, games and eating all appropriate and not expensive and misuse and The importance of the female element to be a labor Women, Attention to entertainment and diversify services, multi events for kids and ladies and serve all women ages and we want an open cinema
weekly entertainment such as (birds - plays)
a prayer room and a gym for ladies
restaurants, prayer room, new games, grocery
Children pool, Flower garden
Please pay attention to the nature in the garden
increase the games and expand the park
Regulate the entry of visitors
A special walk path for exercise, change some trees that have no useful, put a series of diverse restaurants
Safety, increase games, repair all utilities at the park
library for family, internet (wifi), theater, workshop + skills education (drawing, drawing on sand, Painted / drawing on glass and other , AC conditioner in summer, snowstorm games in summer, a Work camp for schools with the cooperation of the Scouts
Please don't allow the shisha in the garden cafeteria - please make the entrance free - please make the garden only for families because the workers make a pressure on the park.
Have BBQ area, improve the games, shaded area
No Suggestion
a special day for families and another day for ladies
A day for family and day for youth
I hope they control all around the park
swimming pool for women and men , Bicycles, Café, Beauty salon for ladies, restaurant, Grocery with a reasonable price, family visit only , space for football, Payment control while entering
provide securities all around the park , services, clearness, and facilities such as prayer room and restaurant
Adjust the bathrooms and workers for cleaning, canteen with reasonable price for all, a place for football at bani yas family park, games for adults and children, cut down the trees, order the park and lighting , a day for tradition food and yola
Development of services and the provision of services
Increase the games and distribute them all among the park and taking care of the green and the cleanliness of the park
Bani yas water world
The need for a water sports and swimming pool
Games such as, swimming pool, bicycles, roller coaster, and trumelena
Games similar to yas world and amusement games
electronic games, swimming pool for ladies and mans
Taking care for the sport tools
Section for electronics games and sections for small games. And the park should be divided for a Bbq area, games, and an area to enjoy nature and silence.

family park in which all family (father and mother) share in games and activities and have culture and education programmers, taking care of the restaurant and prayer room, small parks that will serve the area (fareej)
Develop the utilities and electronic games
God grant you success and give wellness
Provide prayer room for women's, games, and ladies saloon.
You need to improve too much and put flowers.
Put rules and electronic Recycle Bin
Every citizen or visitor have to maintain the cleanliness of the park
a private space to play football and bikes
expand the park and provide a football stadium
no comment and suggest
Improving Lighting for Al Wathba Park, Insects and soil treatment, open Bani yas park morning until 12 noon, Booth for sale
the guards doesn't deal friendly with visitors
Please put people who have experience in dealing with the public and have uniform
I suggested the most important things are safety and children games, the park is very nice but it only lack some development and safety rules.
Booth for women's cloth, perfumes, and kids toys with reasonable prices. Please lasting insecticide spraying
Expand the park
Football stadium only for young people
Large screen display to watch movies, sabouni stadium.
Display screen for matches, games, improve the bathrooms and prayer room, restaurants, coffee shop, and beautiful view
Supply of some electronic devices
In addition to the clinic the garden, put more security in the park in order to avoid problems
Build a small hotel
seed flowers and clean the mosque and bathrooms, and take the fountains for the children safety, provide water cooler to make it easier to buy
Restaurant - BBQ area - gym - games for all ages.
exclusion the café popular content in the garden immediately, re-dye the color of the garden, Access is an electronic ticket and not in manual from the park keeper, department for dangers games for older people
Taking care of the park
The park need football - volleyball - basketball, you need to increase the games and improve their level, provide bathrooms
football stadium
Enjoy
Build a mosque for women is very important
Improve the games and clean the bathrooms and build a mosque for mans and women's
a special corner for events , and a corner for shops and restaurants
I hope that they repair the electric games, A place for barbecue

Thematic Map of Qualitative Data

Opinions collected at the Family Park

Opinions collected at the Ladies Park

Recommendations based on opinions collected

Based on the data collected from the workshops and surveys we find that the following improvements are most desired by those visiting the park.

- Providing games:

The majority of users prefer to have many and different types of games that serves all age groups and genders such as electronic games like in Theme parks and arcades; these are especially popular amongst the teenagers. Also other entertaining games and play grounds for the very young ones. The games should be distributed along and around the park and in sections, for example a separate area for playing football and another for kid's playgrounds. In addition, the games should adopt the modern style that provide higher standards of safety and entertainment at the same time.

- Provide cleaners

The park visitors/users have suffered from the lack of cleanliness of the public bathrooms, the mosque and also some areas in the park; and so they had the suggestion to have cleaning hours during the visiting hours and not only when the park's closed.

- Offer more and better services

The park visitors claimed that there is no designated rooms or places for the ladies to pray in. In addition, a food court is very much needed in the park and in both (family and ladies area) also a coffee shop/café and some vending machines (snacks & drinks) that could be distributed along some areas of the park.

- Health Club

Requests that a swimming pool located at the side of the park with providing some instructors and trainers and a gymnasium located in the right side of the park which

is would be very useful as there are some unused areas/plots. In addition, the ladies requested a saloon.

- Instruction and guidance

Abu Dhabi Municipality should provide some instruction and rules by using signage (what's allowed and what's not) - fees, costs & expenses, behaviours, types of facilities available and directions.

- Awareness

Spread awareness by advertising events that help preserve public property (games, vending machines, bathrooms cleanliness and mosques). In addition, help protect the environment and how to conform to the instructions of the garden.

- Management supervision

Supervision of property and behaviours of the visitors, fair and unbiased attitude and equality between visitors. As some of the visitors have complained from such mistreatment and have asked for nothing but pleasing results.

- Accessibility

Access to the park should be easy and clear, by developing a better street system and by providing proper sidewalks. Providing special areas for the drop offs and pickups and also areas for bus stops and parking; in order to avoid traffic jams and crowd.

- Landscape

The landscape needs improvement in the type and design, to attract visitors. Using flowers, shrubs, landscape shaded areas, lighting, and the addition of fountains.

- Events

There should be an agenda for events in the park such as cultural events, national events, children and family; these different events can come off monthly or annually.

- Emirati culture awareness

The culture can be revived and shown through hosting several events and providing information booths and kiosks to display the different traditional materials used, food consumed and history lived.

- Neighborhood pocket parks

The residents of Bani Yas have suggested that small parks and green pockets in their neighborhood is necessary very useful. This way the neighborhoods get a unique and environment friendly look and also people can use them on a daily basis.

Conclusions

In the concluding section we attempt to answer the three questions with which we started the project. (i) What is the nature and role of public participation in Abu Dhabi? The Municipality of Abu Dhabi deserves credit for embracing the idea of public participation and supporting research on the topic. There is no doubt that organizing charrettes will make planning endeavours more sensitive to people's needs. Our research also shows that there is an appetite, amongst the city's residents – both locals and expatriates – for telling their story and having their opinions heard. The people who participated in our workshops, for example, were highly appreciative of the fact that the Municipality was involving them in plan-making. If, however, the participation process is not extended to include non-citizens of all socio-economic classes, it runs the risk of appearing exclusionary.

(ii) How is the idea of “participation” framed within a non-democratic political context? Islam stresses the importance of consultation – known as *shura*. This is not really a version of

“democracy” as some have argued. But it is certainly considered a way for the government (or any decision-maker) to make better decisions, consider all perspectives, and create consent, thereby earning legitimacy for the decision. The Qur’an dedicates a whole chapter to *shura*. According to Al Raysuni (2011) *shura* serves the following purposes: (1) determining a correct or the most correct course of action, (2) release from the tyranny of subjectivity and selfish whims, (3) preventing high-handedness and tyranny, (4) teaching humility, (5) giving everyone his due, (6) promoting an atmosphere of freedom and initiative, (7) developing the capacity for thinking and planning, (8) increased readiness for action and support, (9) promoting goodwill and unity, and (10) willingness to endure undesirable consequences. Thus *shura* provides a bridge between planning theory emanating from the liberal-democratic tradition and Islamic thought on representation and consultation.

(iii) What can be done to improve the effectiveness of public participation in Abu Dhabi?

Currently the process of conducting a public participation event is complicated, involving a series of permissions. It can be simplified through enabling legislation that allows the UPC, ADM, DOT (and other relevant agencies) to sanction participation exercises. It is strongly recommended that the participation process be sanctioned by a decree and institutionalized in plan-making and implementation procedures of all agencies involved in urban planning. Further, the participation process should be expanded to include all residents of the city. The participation process ought to return to the community at least once to report how the suggestions were incorporated in the plan, and to get another round of comments. Finally, participation has the potential to become proactive. Communities can be encouraged to envision their parks, streets, markets etc. on an ongoing basis.

References

- A Handbook For Public Participation in Local Governance.* (n.d.). Retrieved from What is Public Participation:
<http://devplan.kzntl.gov.za/asalgp/resources/documents/asalgphandbooks/1-what-is-public-participation.htm>
- Abu Dhabi public Realm Design manual prepared by the Abu Dhabi Urban Planning for the 2030 vision (2011)-This document
- Abu Dhabi Economic vision 2030
- Abu Dhabi Government (2013 a). *Government Structure and System.* Retrieved on April 62, 2013 from
https://www.abudhabi.ae/egovPoolPortal_WAR/appmanager/ADeGP/Citizen?_nfpb=true&_pageLabel=P220015251329123444033&lang=en
- Abu Dhabi Government. (2013 b). *His Highness Sheikh Mohamed bin Zayed Al Nahyan.* Retrieved on April 62, 2013 from
https://www.abudhabi.ae/egovPoolPortal_WAR/appmanager/ADeGP/Citizen?_nfpb=true&_pageLabel=P2401345751200487093469&did=148756&lang=en
- ADB Urban Development Experience and Visions India and the People's Republic of China (2008)
- Al Raysuni, A. (2011). *Al- Shura the Qur'anic principle of consultation.* London, Washington: International Institute of Islamic Thought.
- Angotti, T. (2012, 12 3). *Planners Network: The Organization of Progressive Planning.* . Retrieved from Advocacy and Community Planning: Past, Present and Future:
http://www.plannersnetwork.org/publications/2007_spring/angotti.htm
- American Forests' Urban Ecosystem Analysis, www.americanforests.org/downloads/rea/AF_Atlanta2.pdf
- American Public Health Association telephone survey, www.apha.org/NPHW/pressroom/findings.pdf
- Brain Injury Resource Center.* (1998). Retrieved from Advocacy Plan:
<http://www.headinjury.com/advoplan.htm>
- Baniyas Revitalization Master Plan (2011), www.upc.gov.ae/baniyas/enhancing-community-identity.asp: from Wikipedia, the free encyclopedia
- Baniyas revitalization Master Plan (2011) Bedouin, <http://en.wikipedia.org/wiki/Bedouin>: From Wikipedia, the free encyclopedia
- Baniyas Revitalization Master plan (2011) p.4 Baniyas-South Wathba Revitalization Master Plan 2011
- Bodin, Maria, and Terry Hartig. April 2003. "Does the Outdoor Environment Matter for Psychological Restoration Gained through Running?" *Psychology of Sport and Exercise*, Vol. 4, No. 2.

- Cynthia Girling, R. K. (2006). Informing Design Charrettes: Tools for participation in neighbourhood-scale planning.
- Changnon, S., et al. July 1996. "Impacts and Responses to the 1995 Heat Wave: a Call to Action," Bulletin of the American Meteorological Society. Vol. 77, No. 7.
- Center for Urban Horticulture, University of Washington,
http://www.cfr.washington.edu/Research/fact_sheets/29-UrbEconBen.pdf
- Cordell, H. Ken, et al. 1999. "Outdoor Recreation Participation Trends," U.S. Forest Service, Southern Research Station.
- Dynamic planning for community changes* . (2003). Retrieved from
http://www.charretteinstitute.org/resources/files/BuildingBlocks4_1.pdf
- Dwyer, J. F., and P. H. Gobster. 1997. "The implications of increased racial and ethnic diversity for recreation resource management, planning, and research." In Kuentzel, W. F., ed., Proceedings of the 1996 Northeastern Recreation Research Symposium. General Technical Report NE-232. Radnor PA: USDA Forest Service, Northeastern Forest Experiment Station, pp 3-7.
- Encora Coastal Portal*. (2008). Retrieved from Eight Levels of Public Participation. :
http://www.coastalwiki.org/coastalwiki/Eight_levels_of_public_participation
- EPA United States Environmental protection agency* . (n.d.). Retrieved from Charrettes:
<http://www.epa.gov/international/public-participation-guide/Tools/Input/charrette.html>
- EPA United States Environmental protection agency* . (n.d.). Retrieved from Focus Groups:
<http://www.epa.gov/oia/public-participation-guide/Tools/Input/focusgr.html>
- escholarship*. (2000). Retrieved from Public Participation in Planning: New Strategies for the 21st Century.: <http://escholarship.org/uc/item/3r34r38h>
- European Union Regional Policy: Promoting Sustainable Urban Development in Europe Achievements and opportunities (2009)
- Floyd, M. F., and K. J. Shinew. 1999. "Convergence and divergence in leisure style among whites and African Americans: Toward an interracial contact hypothesis." Journal of Leisure Research, 31:359-84.
- Frumkin, Howard, MD, MPH, DrPH. September 2003. "Healthy Places: Exploring the Evidence," American Journal of Public Health, Vol. 93, No. 9.
- Frumkin H. 2001. "Beyond toxicity: The greening of environmental health." American Journal of Preventative Medicine, 20:234-40.
- Gudaitis, L. (2010, April). "The Modern Majlis: Public Participatory Planning in Shahama and Bahia." *Al Manakh* 2.
- Gobster, P.H. 2002. "Managing urban parks for a racially and ethnically diverse clientele." Leisure Sciences, 24:143-159.

- Gortmaker, Steven, et al. December 2002. "Play Across Boston: Summary Report," Harvard Prevention Research Center Active Facts Report #01-2002.
- Hartig, Terry, et al. June 2003. "Tracking Restoration in Natural and Urban Field Settings," *Journal of Environmental Psychology*, Vol. 23, No. 2.
- Hutchinson, R. 1987. "Ethnicity and urban recreation: Whites, Blacks and Hispanics in Chicago's public parks." *Journal of Leisure Research*, 19:205-222.
- habermas's theory of communicative action and the theory of social capital*. . (2005). Retrieved from Communicative Action: <http://web.williams.edu/Economics/papers/Habermas.pdf>
- Jolley, G. J. (April 2007). *journal of extension* . Retrieved from Public Involvement Tools in Environmental Decision-Making: A Primer for Practitioners: <http://www.joe.org/joe/2007april/tt3.php>
- L, J. (n.d.). *how to design a public participation program*. Retrieved from <http://www.creightonandcreighton.com/webpagepostings/How%20to%20Design%20a%20Public%20Participation%20Program.pdf>
- Local government participatory practices manual* . (n.d.). Retrieved from http://www.fcm.ca/Documents/tools/International/Local_Government_Participatory_Practices_Manual_EN.pdf
- Mdetapress*. . (n.d.). Retrieved from Collaborative Planning-Concepts, Framework, and Challenges: <http://resources.metapress.com/pdf-preview.axd?code=ww95x211713h0u74&size=largest>
- Ohio State Fact Sheet Community Development*. (n.d.). Retrieved from Citizen Participation In Community Development: <http://ohioline.osu.edu/cd-fact/1700.html>
- Partnership for Sustainable Communities in Collaboration with the US Department of Agriculture (www.sustainablecommunities.com)
- people and participation* . (n.d.). Retrieved from deliberative workshops : <http://www.peopleandparticipation.net/display/Methods/Deliberative+Workshops>
- Plan Abu Dhabi 2030: Urban Structure framework plan-Abu Dhabi Planning Council
- Pollution Issues*. (n.d.). Retrieved from Public Participation: <http://www.pollutionissues.com/Pl-Re/Public-Participation.html>
- Payne, Laura, et al. October 1998. "Local Parks and the Health of Older Adults," *Parks and Recreation*.
- Pratt, Michael, MD, MPH; et al. October 2000. "Higher Direct Medical Costs Associated With Physical Inactivity." *The Physician and Sportsmedicine*. Vol. 28, No. 10.

- QFinance*. (n.d.). Retrieved from Collaborative Planning, Forecasting, and Replenishment: <http://www.qfinance.com/dictionary/collaborative-planning-forecasting-and-replenishment>
- Raafat, H. & Hoath, N. (2011, May 17). "Majlis tradition inherent to UAE culture: Al Dhahiri." *Khaleej Times*.
- Reed, J. (2007). The efficacy of the design charrettes as a tool for community planning .
- Running Pure. In web18.worldbank.org/ESSD/envext.nsf/80ByDocName/ProtectedAreasProtectedAreasManagementRunningPure
- Sanoff, H. (2000). *Community participation methods in design and planning* . Canada : John Wiley & Sons, Inc .
- Scenario Planning Peer Workshop Report - Frankfort, Kentucky*. (2012 , 5 23). Retrieved from Scenario Planning and visualization in Transportation : http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/resources/frankfort_ky/sec05.cfm
- SciencesPo*. (2010). Retrieved from Making Public Participation Work: <http://sciencespo-globalgovernance.net/node/45>
- Stakeholder Interviews*. (n.d.). Retrieved from EPA United States Environmental protection agency : <http://www.epa.gov/international/public-participation-guide/Tools/Input/interview.html>
- Sustainable Revitalization of the Brunck Quarter (2006)
- The Baniyas Infrastructure Urban Development (United Arab Emirates yearbook 2004)
- Tropman and Tropman Architectures: Architecture landscape conservation Interior Urban Design interpretation (2002)
- the community survey: a tool for participation and fact-finding*. (1995). Retrieved from <http://cru.cahe.wsu.edu/cepublications/wrep0132/wrep0132.html>
- Together we can be wiser than any of us can be alone*. (n.d.). Retrieved from The co-intelligence institute : <http://co-intelligence.org/>
- Takano, T, et al. December 2002. "Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces," *Journal of Epidemiology and Community Health*. 56: 913-918.
- Tinsley, H. E., D. Tinsley, and C. E. Croskeys. 2002. "Park usage, social milieu, and psychosocial benefits of park use reported by older urban park users from four ethnic groups." *Leisure Sciences*, 24: 199-218.
- United States Environmental Protection Agency-Building Vibrant Communities: community benefits of land revitalization (2009)

Unep. (n.d.). Retrieved from Purpose and Objective of Public Involvement.:
http://www.unep.ch/etu/publications/EIA_ovrhds/top03.pdf

Urban planning Council . (2007). Retrieved from Abu Dhabi Public Realm Design manual:
<http://www.upc.gov.ae/prdm/common/docs/Public%20Realm%20Design%20Manual.pdf>

Urban Development Strategy: Meeting the challenges of rapid urbanization and the transition to market economy (2006)

Urban Development Commission CAP (2003)

Wise Geek. . (1998). Retrieved from What is Communicative Action?:
<http://www.wisegeek.com/what-is-communicative-action.htm>

Wilson, Edward O. 1984. *Biophilia*. Cambridge: Harvard University Press.

Wilson, Edward O. 1999. *The Diversity of Life*. New York: W. W. Norton & Company.

Appendix A: Advertisement

We
Want To Hear
Your Voice

To Develop Your Park In Bani Yas

Draw, write, listen or speak – visit our
workshop to tell us how your park
should look and work.

Your presence contributes to the change

Sponsorship



نحن
نرغب بسماع
صوتك

لتطوير حديقتك في بني ياس

يمكنك المشاركة من خلال الرسم . الكتابة . الأمتاع
أو التحدث - زورنا في ورشة العمل لتتعرف على
تطلعاتكم حول الشكل الأمثل لحديقتكم

حضوركم يملأه نهج التطوير

برعاية :



*Appendix B: Surveys and Consent form (English & Arabic)***Survey****Public participation in Bani Yas Park**

Good morning/afternoon Sir/Madam,

Al Hosn University Students is carrying out a survey to assess residents' needs and attitudes toward the parks and recreational facilities available within their neighborhood. This survey will take around 5- 10 minutes to complete.

Thank you,

Place of living	
Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
Age	<input type="checkbox"/> Less than 18 <input type="checkbox"/> 18 -29 <input type="checkbox"/> 30-39 <input type="checkbox"/> 40-49 <input type="checkbox"/> 50 years / more
No. of family members	No. of children < 18 years (___)
Nationality	

Q1. When do you usually visit the park? Multiple answers possible

No.	<i>Weekends</i>	(v)	<i>Weekdays</i>	(v)
1	<i>Morning</i>		<i>Morning</i>	
2	<i>Afternoon</i>		<i>Afternoon</i>	
3	<i>Evening</i>		<i>Evening</i>	
4	<i>Night</i>		<i>Night</i>	

Q2. In the table below please give points for the elements in the park:

No.	Elements/ Evaluations	Excellent 5	Good 4	Acceptable 3	Needs Improvement 2	Poor 1
1	Accessibility					

2	Parking					
3	Timing					
4	Landscape – Trees & Plants					
5	Lighting					
6	Shading area					
7	Playing area / games					
8	Prayer room					
9	Restaurants					
10	Restrooms					
11	Cleanliness					
12	Benches					
13	Waste Collection					
14	Restaurants					

Q3. What are the facilities or amenities that you would like to be available in the park?

No.	Statement	Very important	Important	Neutral	Not important	Not important at all
1	Shaded Seating Areas	1	2	3	4	5
2	shaded Plaza	1	2	3	4	5
3	BBQ Area	1	2	3	4	5
4	Picnic Area	1	2	3	4	5
5	Educational and Cultural Areas	1	2	3	4	5
6	Water Interactive Play Areas	1	2	3	4	5
7	Skate park	1	2	3	4	5
8	Multipurpose Sport field for football, basketball,	1	2	3	4	5
9	gym	1	2	3	4	5
10	Bicycle racks	1	2	3	4	5
11	Vending machines (-snacks & drinks)	1	2	3	4	5
12	Café	1	2	3	4	5

13	Restaurant	1	2	3	4	5
----	------------	---	---	---	---	---

Q4. What type of events would you be interested in attending if they were organized within the Park? Multiple answers possible

No.	Event	(v) / (x)		No.	Event	(v) / (x)
1	Cultural Events/Arts			8	Educational Events	
2	Musical Events			9	Charity Events	
3	Events for kids			10	Sports Events	
4	Events for parents & kids			11	Events for females	
5	Special need and/or orphans			12	Events for Senior citizen	
6	Entertainment Events			13	Health awareness programs	
7	Cooking Events			14	National themed events	

Q5. Write your opinion and suggestions that can help to develop the park:

Additional comments / suggestions

Q6. Do you have a suggestion for a name that this new park could be known as?

Suggested name for New Park

THANK AND CLOSE INTERVIEW

Village Community: A Planning Practice of Local Urbanization in Countryside Areas in Southwestern China

Shang CHENG ¹, Nankai XIA ¹²

¹College Of Architecture And Urban Planning, Tongji University, Shanghai, China

e-mail:12csbwb@tongji.edu.cn

² Tongji Urban Planning & Design Institute, Shanghai, China

Abstract

Introduction and objective: in countryside areas in Southwestern China, especially in Sichuan province, a large amount of villagers are still residing in the small, dispersed villages. These villagers are not able to lead the equal quality of lives as the citizens in Chengdu, the central city in Sichuan province. To solve this problem, this paper introduces a typical planning practice in Chengdu, which is called “village community”. Village community aims to realize local urbanization, by constructing the new-style village in the countryside, which still locals in the countryside areas, but has fulfilled the same functions of the urban communities. Two typical village communities in Chengdu are presented. **Material and methods:** key variables to improve the inclination of villagers to immigrate to village communities are interpreted. These variables are set up as the independent variable, and the rate of villagers residing in village communities (the number of villagers residing in village community divided by the number of the total villagers in the town) is set up as the dependent variable. These data are analyzed by using the statistic methods of correlation analysis and multiple regression analysis, in the SPSS software environment. **Results and Discussion:** the main factors that motivate villagers to immigrate to village communities are number of new village communities and Proximity to enterprises, which imply that housing condition and occupation are the first two important things for villagers.

Keywords: village community, Southwestern China, local urbanization

1 Research Background and Objective

Up to 2012, the rate of urbanization in China has exceeded 50%, nevertheless in countryside areas in Southwestern China, especially in Sichuan province, a large amount of agricultural people are still residing in the small, dispersed villages. These villagers are not able to lead the equal quality of urban lives, which contain the opportunities of jobs, education, medical treatment, and the agreeable infrastructures such as sewage factories, roadways, for instance. However, it's not realistic to push the villagers into cities, which have limited capacity of inhabitants. As a result, Chinese government intends to fulfill the urbanization of these villagers locally, which is defined as *local urbanization*. Local urbanization means that the villagers are still residing in the villages, but their life quality is as high as that of citizens. The villagers can

also work in the enterprises running in villages. This type of urbanization prevents villagers from rushing into cities, without occupation and housing, as the tragedies staging in the cities of Latin America.

A typical planning practice aiming at local urbanization is presented in this paper, which is defined as *village community*. Village community aims to fulfill *local urbanization*, by planning and building a new village, which still locals in the countryside areas, but has the whole urban functions, as apartments, primary schools, medical service centers, roadways, sewage factories. Village community is also close to enterprises, where the villagers work in. As a result, villagers who live in village communities are able to lead an urban life. These villagers can be named as *countryside citizens*.

As the strict land policy is running in China, farmland is forbidden to converse to built land, which can be used to construct buildings. But each villager possesses the private housing land, the area of which is so great, approximately 50-80m² by person. If villagers are willing to immigrate to village community, their housing lands can be collected and conversed to build the new village. Because villagers will be residing in the apartments, which means that the land area of residing is approximately 30-50 m² by person. The residual land can be used to build enterprises, infrastructures, public services, and so forth. In other words, village community does not need extra land, but has satisfied the land demand of urban functions. As the policy of land converse is allowed in China countryside area, the planning and building of village community is feasible, without offending the land policy.

2 Case Studies

The case of village community is selected from Chengdu, the center city of Sichuan Province, over 60% population of which is still residing in the country area in 2011. The problem is that most of the villagers who give up the agricultural work want to enter the center city to get higher-salary jobs, while there are not as much as the number of occupations as they need. As a result, they have to be engaged in some lower-salary and unstable jobs, such as carriers of burdens, waiters in small restaurants, and so on. They also cannot live in the center city, as the rent of housing is so high. Since that, they have to return to their home at villages every night, which are several miles far from the center city. This problem increases the commute cost of villagers, and results in heavier traffic jams on the roads connecting the urban area and the country area. Conclusively, local urbanization of villagers is what Chengdu needs right now. Therefore, the planning and construction of village community has been fulfilled in Chengdu in recent years. By 2011, 1,633 village communities are planned, and 1502 village communities are constructed; where over one million of villagers are already residing.

Two village communities in Chengdu are presented. The first one is *Taiping Village Community*, located in Xinping Town, Xinjin County. This village community is built on the local site, close to the urban area of Xinjin County. The total size of the village community is

about 8hm², and the number of villager about 3000. All of the villagers have immigrated to the new apartments of six floors, and the personal housing area is about 40m². All of the work force are occupied, 85% of which occupy in the enterprises of secondary and tertiary industry. Besides, all the farm land of villagers is centralized to be running together by an agricultural cooperation founded by the villager themselves. The cooperation hires the 15% of the local work force who are still anticipate the agricultural work, and skilled farm workers from the outside. In order to raise the revenue, the economic crop is cultivated, such as organic vegetable and fruits. As a result, each villager does not need to anticipate the agricultural work, but enjoy the rent of land yearly paid by the cooperation. The personal revenue of villagers is over 7000 rmb in 2011.



Figure 1: bird-eye view and Google satellite map of Taiping village community^j

The second one is *Heming Village Community*, located in Liujie Town, Dujiangyan County. According to the unique landscape, this village community is not centralized to a single site, but is divided into seventeen clusters. Several buildings of two or three floors with traditional style are built, instead of apartments with modern style. About 86% of the villagers have immigrated to the new buildings. A license of the land property confirmation is certificated to each villager, which assurance the right of villager to use the farm land. As a result, villagers can rent their lands to the cooperation, or do the agricultural work themselves. In fact, almost all the farm land is centralized to the cooperation, which cultivates flowers and develops country tourism.



Figure 2: bird-eye view and the building picture of Heming village community^{jj}

3 Methods and Material

Village community contains various urban functions, but what are the most important ones to help improve the life quality of villagers, and which factors mostly impact the willing of villagers to immigrate to village communities? In order to know that, some related variables are selected to check and interpret. As most of village communities are located in towns which almost have small size, and village communities and towns have some conditions in common, some factors are based on towns. The factors include:

(1) **Number of new village community in town:** it explains how number of village communities influences the willing of villagers to immigrate to village community. In common sense, villagers incline to immigrate to new communities.

(2) **Proximity of town to central city:** it explains how proximity of town to center city influences the willing of villagers to immigrate to village community. It is represented by linear distance from town to central city. The higher distance it is, the lower the proximity is. As Chengdu is a radial city, and also has a radial road system, linear distance represents proximity of town to center city. In Chengdu, towns close to center city often develop better than the ones far from center city, and villagers in these towns often lead a better life.

(3) **Proximity of village community to roads:** it explains how condition of transportation of village community influences the willing of villagers to immigrate to village community. If village community is closer to roads, villagers can travel more conveniently. It is represented by linear distance from town to various levels of roads, including highway exit, province road, town road, and country road. If the distance is no more than 500m, then it is defined to close to roads, otherwise it is defined to be far from roads. This proximity is been quantified by given an estimation index.

(4) **Economic level of town:** it explains how economic level of town influences the willing of villagers to immigrate to village community. It is represented by GDP of town yearly.

(5) **Revenue level of villagers in town:** it explains how revenue level of villagers influences in town influence the willing of villagers to immigrate to village community. It is represented by personal revenue yearly.

(6) **Size of town center:** it explains how size of town center, which in other side means the developing level of town center, influences the willing of villagers to immigrate to village community. It is represented by the size of built area of town center.

(7) **Proximity to enterprises:** it explains how proximity to enterprises influences in town influence the willing of villagers to immigrate to village community. If village community is closer to enterprises, villagers can commute to enterprises more conveniently. It is represented by linear distance from town to various enterprises, including industry sites, tourism sites and agricultural sites. If the distance to these sites is no more than 500m, then it is defined to close to enterprises, otherwise it is defined to be far from enterprises. This proximity is been quantified by given an estimation index.

(8)Capacity of primary schools in town: it explains how capacity of primary schools in town influences the willing of villagers to immigrate to village community. It belongs to public service facilities. It is represented by the number of student positions in primary schools.

(9)Capacity of medical service centers in town: it explains how capacity of capacity of medical service centers in town influences the willing of villagers to immigrate to village community. It belongs to public service facilities. It is represented by the number of medical care beds in hospitals and clinics.

(10)Capacity of sewage factories in town: it explains how capacity of sewage factories in town influences the willing of villagers to immigrate to village community. It belongs to public infrastructure. It is represented by the daily ability of sewage factories dealing with sewage.

These variables are set up as the independent, and the factor **inclination of villagers immigrate to village communities** (the number of villagers already residing in village communities divided by the number of the total villagers in town) is set up as the dependent variable. 169 towns of Chengdu (which has 223 towns in total) are selected to be the samplings, so the sampling rate is 75.8%.

The data of these variables are collected from Bureau of Planning in Chengdu, in 2010. These data are analyzed by using the statistic methods of correlation analysis and multiple regression analysis, in the SPSS software environment.

Table 1 Variables and their contents

Variables	Estimation index	Variable Abbreviations
Number of new village community in town	Number of villager community constructed in town	Cq
Proximity of town to central city	Linear distance from town to central city (km)	Cd
Proximity of village community to roads	Close to highway exit: 9 Close to province road: 7 Close to town road: 5 Close to country road: 3 Far from roads 1	Tr
Economic level of the town	GDP of the town (million RMB)	Ec
Revenue level of villagers in town	Personal revenue per villager by year	Pi
Size of town center	Size of built area of town center(km ²)	Ua

Proximity to enterprises,	Close to industry sites: 8 Close to tourism sites: 6 Close to agriculture sites: 4 Far from enterprises: 2	ln
Capacity of primary schools	Number of student positions in primary schools	Ei
Capacity of the medical service centers	Number of medical care beds in hospitals and clinics	Hi
Capacity of sewage factories in the village community	Daily ability of sewage factories dealing with the sewage(ton/d)	Wi
Dependent variable: inclination of villagers immigrate to village communities	Number of villagers residing in village community divided by number of total villagers in town (%)	Pc

4 Analysis and Results

The analysis model is:

$$Pc = f(Cq, Cd, Ec, Pi, Ua, ln, Ei, Hi, Wi, Tr) \quad (1)$$

As the independent variables have different dimensions, they are standardized by converting to the natural logistic form, and then the model can be demonstrated as the linear from:

$$\ln Pc = \beta_0 + \beta_1 \ln Cq + \beta_2 \ln Cd + \beta_3 \ln Ec + \beta_4 \ln Pi + \beta_5 \ln Ua + \beta_6 \ln ln + \beta_7 \ln Ei + \beta_8 \ln Hi + \beta_9 \ln Wi + \beta_{10} \ln Tr \quad (2)$$

$\beta_0 - \beta_{10}$ are the constant.

These variables are input into the SPSS software environment and seven independent variables are finally reserved: Revenue level of villagers in town(Pi), Number of new village community in town(Cq), Proximity to enterprises(ln), Capacity of primary schools(Ei), Proximity of town to central city(Cd), Size of town center(Ua), Proximity of village community to roads(Tr).

The result of the multiple regression analysis is that:

$\ln pc = -0.263 \ln Pi + 0.599 \ln Cq + 0.570 \ln ln - 0.362 \ln Ei - 0.193 \ln Cd + 0.167 \ln Ua + 0.447 \ln Tr$ (3) the relation coefficient value $r^2 = 0.890$, and the results passes the student's t test, under the 95% confident interval. It indicates that this equation has an excellent linear relation. Besides that, the result nearly fits the normal distribution.

The result of coefficient correlation check shows that these variables do not have the correlation, except Cd and Pi (0.659). This verifies the hypothesis that in Chengdu, towns close to center city often develop better than the ones far from center city, and villagers in these towns often lead a better life.

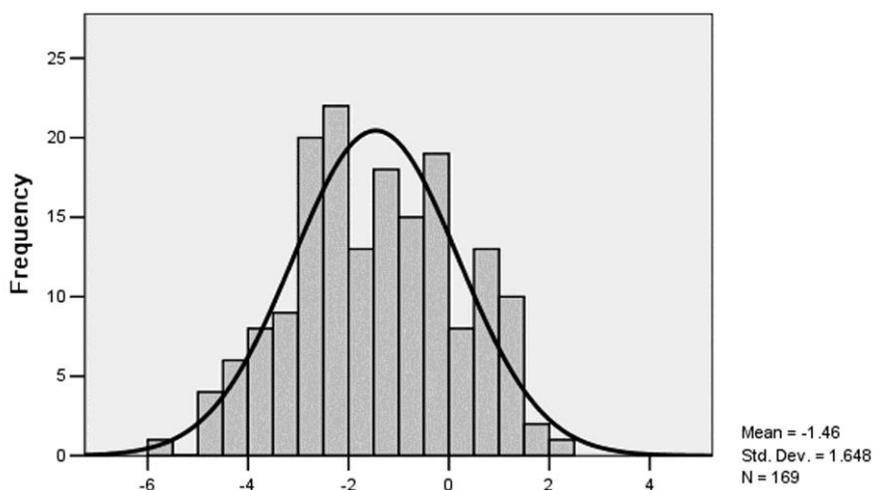
Table 2 the coefficient result

Name	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Pi)	-.263	.074	-.903	-3.2540	.001
(Cq)	.599	.070	.425	8.555	.000
(In)	.570	.162	.333	3.511	.001
(Ei)	-.362	.060	-1.073	-6.050	.000
(Cd)	-.193	.074	-.248	-2.612	.010
(Ua)	.167	.072	.337	2.301	.023
(Tr)	.447	.217	.320	2.057	.041

Table 3 the coefficient correlations matrix

Name	(Pi)	(Cq)	(In)	(Ei)	(Cd)	(Ua)	(Tr)
(Pi)	1.000	.000	0.133	-.493	-.659	-.176	-.484
(Cq)	.088	1.000	.046	-.168	-.141	-.167	-.016
(In)	-.133	.046	1.000	-.032	.096	-.456	.027
(Ei)	-.493	-.168	-.032	1.000	.124	-.290	-.061
(Cd)	-.659	-.141	.096	.124	1.000	.327	.051
(Ua)	-.176	-.167	-.456	-.290	.327	1.000	-.179
(Tr)	-.484	-.016	.027	-.061	.051	-.179	1.000

Figure 3 Histogram of the regression standardized residual



5 Discussion

The result indicates the weights of each independent variable, which imply its importance to the willing of villagers to immigrate to village community. Among these factors selected, Cq, In,

Tr, Ua have positive impact, and Cd, Pi, Ei have negative impact.

The variable of Number of new village community in town (Cq) has the most positive impact (0.559), which indicates that the planning and construction has a great impact on the willing of villagers to immigrate to village community. It is proved that villagers have great inclination to the new communities, because new communities always have good housing condition.

The variable of Proximity to enterprises (In) has also the high positive impact (0.570), which indicates that proximity to enterprises is also very important for the villagers residing in village communities. As most of villagers occupy in enterprises, as a result, the closer village communities are to enterprises, the more villagers are willing to immigrate to village communities, as it's more convenient for them to commute.

The variable of Proximity of village community to roads (Tr) has a positive impact of 0.447, which is also reasonable. If proximity of village community to roads is poor, villagers incline to still live in the ancient house, where it is closer to farmland, and still occupy in agricultural work. If proximity of village community to roads is poor is better, then villagers are able to travel to other places to work, like enterprises of secondary and tertiary industry, even to town center or the center city.

The variable of Size of town center (Ua) has a positive impact of 0.167, which indicates the influential of size of town center on village communities. As plenty of village communities are close to town center, and the size of town center represents the developing level of town center, the greater the town center is, the more inclination of villagers immigrate to village communities, aiming to work at town center and share the town facilities.

The variable of Revenue level of villagers in town (Pi) has a negative impact of -0.263. The reason is that, according to the census of Chengdu (2011)ⁱⁱⁱ, among the average total revenue of villager per year, the fractions of salary revenue, family commercial revenue(including farming revenue) and property revenue are 31.2%, 56.3%, 12.5%; and the fraction of farming revenue is 41.3%. This structure of personal revenue indicates that farming revenue is still the most important revenue for villagers. Because only 43.7% of farm land in Chengdu has been conversed and centralized, 56.3% of farm land in Chengdu is still cultivated by villagers themselves, individually. As a result, villagers incline to live in ancient houses in order to cultivate their farm land more easily, but not to immigrate to new village communities.

The variable of Proximity of town to central city (CD) has a negative impact of -0.193, which means that villagers residing close to the center city incline to immigrate to village communities. The reason is that villagers residing close to the center city usually do not occupy in agricultural work, but in secondary and tertiary industry. As a result, residing in new village communities is more convenient as their lives are totally urbanized. Oppositely, villagers residing far from the center city still occupy in agricultural work, as there are not as many enterprise as they need in towns. Therefore, they still prefer to reside in their ancient houses.

The variable of Capacity of primary schools in town (EI) has a negative impact of -0.362. That means the higher capacity of primary schools; the fewer villagers incline to immigrate to village communities. The reason is that there are still plenty of primary schools located in villages, which close to villagers' houses but commonly have small size and low quality. If these primary schools are merged into greater ones, the new primary schools will have greater size and higher quality, and villagers prefer to reside in village communities, as the new primary schools are usually close to village communities.

The variables excluded by SPSS are Capacity of medical service centers in town (Hi), Capacity of sewage factories in town (Wi) and Economic level of town (Ec). It indicates that these variables have no relationship with the dependant variable of Inclination of villagers immigrate to village communities (PC). The reason why Capacity of medical service centers in town is excluded is that almost all villages have their own media centers or clinics with small size and low level, that means villagers can share the basic medical service neighbor to their houses. As a result, they do not need to immigrate to village communities which are often located beside high-level hospitals. The reason why Capacity of sewage factories in town is excluded is that sewage factories in town mainly deal with the sewage in town center, while the sewage from villagers is treated by themselves, by pouring the sewage into rivers, pools and farm land directly, or treated by small sewage stations simply. The reason why Economic level of town is excluded is that most of the GDP of town is from the industrial parks, which do not hire many local villagers.

6 Conclusion

The main factors that motivate villagers to immigrate to village communities are number of new village communities and Proximity to enterprises, which imply that housing condition and occupation are the first two important things for villagers. These two factors are also the fundamental urban functions that a city provides to citizens. Villagers incline to immigrate to village communities mainly because these village communities have good housing condition and close to the enterprise where they can work. As a result, a feasible way to improve local urbanization is to plan and build high standard village communities, especially with good housing conditions. The surplus land after land conversion and centralization can be used to build enterprises, which can provide more suitable jobs for villagers, especially in secondary and tertiary industry, which helps improve the salary revenue of villagers. This also helps villagers to leave from farm lands, and improve their property revenue.

Besides that, village communities would better be close to roads and town centers, which improve the commute of villagers, and help villagers to share the urban facilities in town centers. The public facilities and infrastructures in villages as primary schools, media centers or clinics, small sewage stations, should be centralized and merged into something of greater size and higher level, and moved beside to village communities. As a result, villagers can

share the better public service and infrastructures.

Endnotes:

-
- ⁱ The left figure is from Bureau of Planning in Chengdu, the right figure is from Google Map.
 - ⁱⁱ These figures are from Bureau of Planning in Chengdu.
 - ⁱⁱⁱ These data is from the Census of Chengdu (Yearbook of 2011).

Reference

- Gafford, Farrah D.(2013) "It Was a Real Village": Community Identity Formation among Black Middle-Class Residents in Pontchartrain Park, Journal Of Urban History ,Vol. 39 No. 1(1)
- Cabras, Ignazio(2011)Industrial and provident societies and village pubs: exploring community cohesion in rural Britain, Environment And Planning A, Vol. 43 No. 10(11)
- Bernard, Tanguy(2010)When Does Community Conservatism Constrain Village Organizations?, Economic Development And Cultural Change , Vol. 58 No. 4(7)
- Barr, A(2004) Forging effective new communities: The evolution of civil society in Zimbabwean resettlement villages, World Development ,Vol. 32 No. 10(10)

Managing Growth in the Sunshine States: Urbanization and Planning in Queensland and Florida

Aysin Dedekorkut-Howes¹, Severine Mayere-Donehue²,

¹ Urban Research Program, Griffith School of Environment (Griffith University),
a.dedekorkut@griffith.edu.au

² Civil Engineering & Built Environment
Science and Engineering Faculty (Queensland University of Technology),
severine.mayere@qut.edu.au

Synopsis

This paper compares the urbanization and planning in the two sunshine states of Florida and Queensland highlighting the similarities and differences, evaluates how effective the growth management programs have been, and examines the recent changes and the challenges they bring to the respective states.

1. Introduction

The states of Queensland, Australia and Florida, U.S. have distinct similarities in terms of physical characteristics such as geography and climate as well as population growth trends, development history and structure. In fact, some parts of South Florida such as Fort Lauderdale and South East Queensland (SEQ) such as the Gold Coast are virtually indistinguishable. Both states are late bloomers and both are experiencing higher than average growth rates within their respective countries as a result of being desirable tourism and retirement destinations, both of them have very fragile environments and potentially growing vulnerability to climate change, and both try to cope with the development pressures they are facing by using growth management programs. However, they are different in terms of the planning regimes, central-local government relations, and patterns of urban/local politics.

In Florida, historically the 1985 Florida Growth Management Act (GMA) governed the growth management process whereas in SEQ, Australia's fastest growing region, the latest successor of the Regional Growth Management Framework started in the 1990s, the 2009 SEQ Regional Plan provides the framework for managing the expected growth. On June 1, 2009 Governor Charlie Crist signed the Community Renewal Act as Florida's new growth management legislation despite widespread opposition from environmentalists and local governments. At the same time the Queensland state election in March 2012 ended fourteen years of Labor government and brought to power the Liberal National Party (LNP) and major changes in planning regulations was set in motion. Freestone (2004) observes that historically transpacific exchanges of ideas have been more pronounced in times of prosperity. This may be about to change. These simultaneous developments arising during the aftermath of a global financial crisis make the evaluation and comparison of the planning regimes of these two states very pertinent and timely.

In this paper we first examine the relationship of urban development patterns of Australia and the U.S. and highlight the similarities and differences between the characteristics, development histories, planning regimes and growth management programs of the states of Florida and Queensland. Then we examine the latest developments in the planning frameworks and set up a framework for further evaluation and comparison of the two states.

2. Urbanization and Planning in the United States and Australia

Physical similarities aside, political structures and planning regimes of Australia and the U.S. are so different from each other that it is amazing they can produce so similar urban areas that are sometimes virtually indistinguishable. It makes one wonder whether planning regimes and political structures make a difference at all. A somewhat related question raised by the similarities is whether these similar outcomes are coincidental or intentional due to taking American cities as a model for newer developments in Australia. Most of these questions are beyond the scope of this paper, but they provide a framework for the comparisons we present.

There are many basic similarities between the two countries such as comparative size and isolation, new world colonial history, subsequent common cultural background and language, democratic-capitalist political and economic structure, and highly urbanized developed economies (Freestone 2000: 302) with large percentage of foreign born populations¹ (U.S. Census Bureau 2009a) that make the earlier developed U.S. the ideal model for Australia (see Table 1). The land area of the continental U.S. (48 contiguous states) is almost equivalent to the land area of Australia. However, population of the U.S. is over 13 times and density is over 10 times that of Australia. Furthermore, population distribution is more uneven in Australia (Margerum 1995). Gross Domestic Product in the U.S. is more than 10 times, Gross National Income in Purchasing Power Parity is 30 % and median household income is almost 32 % higher than Australia. Given these similarities Bell and Bell (1993: 82) state that “the model that seemed to be ‘natural’, given Australia’s geography and its relative wealth, was the American, or, at least, the Californian city.”

Table 1. Australia and the United States in Numbers

	United States	Australia
Area (km ²)	9,809,155 (total) (3,537,421 sq. miles ¹) 8,080,464 (continental) (3,119,059 sq. miles)	7,682,300 (2,941,285 sq. miles ¹)
Population (2012) ²	313,900,000	22,000,000
Density (people per km ²) ²	33 (89 per sq. mile ¹)	3 (7 per sq. mile ¹)
Percent urban ²	79	82
Gross Domestic Product ³ (millions of U.S. \$) 2012	15,684,800	1,520,608
Gross National Income in Purchasing Power Parity per Capita ² (US\$) 2010	47,310	36,910
Median Household Income (U.S. \$)	50,007 ⁴	38,000 ⁵

Sources: ¹U.S. Census Bureau (2009a), ²Population Reference Bureau (2012), ³The World Bank (2013), ⁴U.S. Census Bureau (2007), ⁵Australian Bureau of Statistics (2006).

Looking up to the “other” new world in addition to or instead of the United Kingdom is a long standing tendency in Australia. According to leading Sydney planning propagandist George Taylor in 1914 “America was ‘indisputably the land of the up-to-date’... America was a nation ... ‘inspired by the same motives as inspire us, and [it] is doing things generally in almost every sphere of activity as we would do them. It is the great university in which we should receive our schooling on how to prosper and progress’” (Freestone 2000: 306). Freestone (2004: 195) reports that “[b]y the 1920s ... informed planning commentators were actively promoting American and Australian cities as comparable “new world” environments.” Facing similar problems of sprawl, uncoordinated infrastructure provision and traffic congestion in the 1920s leading planning advocates in Australian cities “turned away from small area planning schemes based on British precedents towards an American-style master planning approach” (Freestone 2000: 301).

Post-war period witnessed conscious examination of the U.S. as a model. Visits from American professionals to Australia and visits of Australian planners to the States advanced

transfer of ideas. After visiting the U.S. on a Fulbright Scholarship Melbourne planner-economist George Connor concluded that “American technical know-how, optimism, and vision could assist in the resolution of the main problems facing Australian cities—traffic congestion, inner-city redevelopment, suburban infrastructure, and better planning systems” (Freestone 2004: 199). He wrote:

It is in the United States that we find civic problems more akin to those facing Australian cities and it is here where we have most to learn. One cannot but realise that America’s civic problems today are ours tomorrow. Many are, in fact, already comparable. Our traffic problems and general mode of living have so much in common (Connor 1955: 28).

Despite warnings by planners such as Rod Fraser against “an uncritical embrace of American solutions for a country of smaller population and resources” Australian urban development followed the model of freestanding malls and freeways along with the rest of the developed world (Freestone 2004: 200). By 1960s British planning influence in Australia was making further way for American ideas (Freestone 2004). Wright (2001: 49) mentions the urban freeway and corridor development ideas of the late 1950s and the 1960s, exported from the U.S. as the “solution to the problems of the cities.”

This trend continued in the 1970s. Among exported American influences in this period Freestone (2004: 204) counts “environmental management, landscape planning, public participation, transference of development rights, and human-scaled place-sensitive planning.” This was followed by “metropolitan area planning through urban redevelopment, systems planning and corporate planning techniques, the new urbanism, land use–transport integration, and growth management” (Freestone 2004: 205). Ward (2002: 384-385) claims that “given so much common ground between Australian and American suburbs, it was inevitable that the new urbanist philosophy would provide the design underpinning for urban consolidation.” Minnery and Bajracharya (1999: 36) note that “The initial visions for master-planned communities (MPCs) in the SEQ have been influenced by those in the U.S. particularly from Florida and California. Many developers and designers made trips to the United States to gain ideas. Some developers saw parallels between canal estates in Florida and the potential to develop such estates on the Gold Coast... In addition, like the growth of MPCs in sunbelt areas of the U.S., interstate migration to South East Queensland contributed to the planning and development of MPCs here.” Freestone (2004: 207) points to “the resort town ‘with old-fashioned neighbourhood values’ of Seaside near Coolumb on Queensland’s Sunshine Coast, with the architecture a fusion of the American Seaside and traditional Queensland homes” as “a direct American inspiration.”

The brief history presented above shows that urbanization and planning in Australia have been influenced by American ideas and models for a long time. However, this does not mean that Australia borrowed everything “as is” from the U.S. Even by 1920s some planners such as Saxil Tuxen warned that Australia could learn from “America’s good examples without falling prey to . . . its many faults” such as “its relatively laissez faire organization of utilities” and the “ugly face of commercialism” (Nichols 1998: 667). After examining Sydney’s suburban employment centers, extending Mees’s (1994) argument Freestone (1997: 256) concludes that “American development trends, even in the large-scale decentralization of retailing, have still not reshaped metropolitan form and structure in a radical way since the turn of the century.” Freestone (2004: 190) agrees that “American ideas have been demonstrably assimilated into Australian planning theory, ideology, and practice over an extended period” however “Australian responses were not uncritical, deferential, undiscretionary forms of ‘undiluted borrowing’” (209) as Ward (2002) suggests. Thus he (2004: 210) concludes “[w]hat has ultimately been documented is arguably less the Americanization of Australian planning and more the Australianization of American planning.”

Whether coincidental or intentional, uncritically borrowed or adapted, the similarities are gaining attention from researchers. Freestone and Murphy (1998: 295) note “[a]n emerging theme in Australian urban studies in the 1990s has been the relative convergence and divergence of the urban development paths of Australian cities compared to those overseas, notably North American.”

Several underlying factors between the countries and cultures may explain the observed differences in urban structures. Australia has much smaller population and economy. Both have federal systems but even these are different as the U.S. has a federal republican system whereas Australia is governed by a parliamentary system (Margerum 1995). Australia is quite close in geographic size to the continental U.S. (see Table 1) but compared to its 48 states Australia has 6 states and two territories. This means each Australian state covers much larger areas with lot smaller populations. State populations in Australia are close to the smaller states in the U.S. In fact, population of Florida (18,328,34ⁱⁱ), the fourth most populous American state, is very close to the population of Australia (see Table 1). A closer examination reveals further differences in state-local government relationships and transportation and land use patterns.

2.1. State-Local Government Relationships

While both countries have federal systems states have more power in the Australian system (Margerum 1995, Freestone 2000, Worthington and Dollery 2000) which makes stronger metropolitan and local growth controls, existence of special purpose metropolitan planning agencies or state agencies with metropolitan jurisdictionsⁱⁱⁱ, statutory controls and supra-local laws and guidelines reflecting more growth control planning goals, i.e. higher level of state intervention, possible (Freestone 1997). Behind the power states hold in Australia lies the fact that many services provided by local governments in the U.S. such as education, health, police, utility (water, sewerage), (Freestone 1997), fire protection (Margerum 1995), public transport and social housing (Freestone 2000) are provided by state governments in Australia. Freestone (1997) remarks that this resulted in greater equality of service provision, lesser socio-economic balkanization and Parkin (1982 cited in Freestone and Murphy 1998) claims less local competition. Furthermore, states have primary responsibility for environmental and natural resource management in Australia while in the U.S. this authority held by the federal government is often delegated to the states by federal agencies under legislative authority (Margerum 1995). This results in more involvement of federal agencies at the state and regional level in both direct and oversight roles.

In Australia from the mid-1950s, urban development was under the control of state governments through special purpose metropolitan planning agencies or state agencies with metropolitan jurisdictions whereas local governments dealt with day-to-day development and zoning control and strong central authorities oversee their work and have the right of final approval of all local plans (Freestone and Murphy 1998). In contrast, planning systems are more fragmented and regional planning powers are weak or nonexistent in many American metropolitan regions. State oversight of local government plans brought by Florida’s Growth Management Act is one of the exceptions to this.

There are also differences in the local government structure and roles between the two countries. The U.S. has “a two-tiered system of local government, with counties performing functions as agents of state government and municipalities in the form of cities, boroughs, villages and towns” (Margerum 1995: 37). In Australia a single tiered structure exists. “Urban governance was therefore split between the state government and a mosaic of local authorities, with the central (state) government holding the ultimate mandate in metropolitan affairs” (Freestone 2000: 302). Furthermore, due to consolidation, the number of local governments is much fewer in Australia (Margerum 1995).

Different from the governance systems of many other comparable economies, local governments in Australia are responsible for relatively fewer functions. This is apparent even when contrasted with a federal system like the U.S. Worthington and Dollery (2000: 351) note that the services provided by local governments in Australia “are largely orientated towards ‘services to property’ and include roads, drainage, waste management, sewerage and water supplies, footpaths and flood mitigation works. By contrast, local governments in the U.S. generally bear responsibility for a large number of major social policy services, including social security, hospitals and health care, schools and police.”

2.2. Transportation Systems and Land Use

Australian cities have a similar land use to that of the U.S. cities. Both have sprawled extensively during postwar suburban boom (Newman and Kenworthy 1989). Kenworthy and Laube’s 1996 international comparison of automobile dependence reveals that among the developed and wealthy countries examined Australian cities are the next most automobile dependant after American cities and have either very similar values to them in the dependency factors, or are next closest to the American cities. The study includes six large Australian cities (Perth, Brisbane, Melbourne, Adelaide, Sydney, Canberra) and 13 large U.S. cities (Houston, Phoenix, Detroit, Denver, Los Angeles, San Francisco, Boston, Washington, Chicago, New York, Portland, Sacramento, San Diego) among others. The results of the study show that, in spite of the fact that Australian cities are less dependent on freeways and Central Business Districts (CBD) are still accessible by public transit (Freestone 1997) in transportation and land use patterns Australian cities are closest to American cities having similar levels of overall metropolitan densities, per capita metropolitan road provision, parking spaces per 1000 CBD jobs, and percentage of workers getting to work on foot and bicycle (Kenworthy and Laube 1996). In other factors of auto dependence such as the per capita auto use, transit service, vehicle ownership Australia is the next closest to the US.

Kenworthy and Laube’s (1996) study show that in 1990:

- *Overall metropolitan densities* in the U.S. (14 people/ha) and Australia (13 people/ha) are the lowest among all cities examined by a factor of three even compared to the next lowest, Metro Toronto.
- *Per capita metropolitan road provision* shows that U.S. (6.7 meters) and Australian (8.3 meters) cities provide most for the automobile. These are 3 to 4 times the roads in European cities, 6 to 8 times in the wealthy Asian cities, and 9 to 12 times in the developing Asian cities.
- In *parking spaces per 1000 CBD jobs* Australian cities lead the world with 489 spaces, followed closely by U.S. cities with 462. The numbers drop dramatically in Toronto and the European cities and reach very low levels in the Asian cities.
- U.S. cities, Toronto, and Australian cities have the lowest *percentage of workers getting to work on foot and bicycle* at only 5 %.
- The U.S. cities generally have the highest overall *vehicle ownership* with 602 vehicles per 1000 for passenger cars and 755 for total vehicles. Australian cities are next after Toronto with 491 cars per 1000 and 595 total vehicles. These figures also drop dramatically in European and Asian cities. The small gap between the two countries is narrowing. According to the Population Reference Bureau (2008) motor vehicles per 1,000 population between 2000–2005 is 787 for the U.S. and 663 for Australia.
- U.S. cities have 1.7 times *per capita auto use* of Australian cities with 11,113 kilometers per person compared to 6571 kilometers in Australian cities.
- With only 28 kilometers of *transit service per person each year* U.S. cities have the lowest level of service among the cities examined, whereas the Australian cities provide more than double this level (60 kilometers). In *service kilometers* U.S. cities

are again the lowest internationally with 63 trips per person annually, while Australian cities are a little better with 92 trips.

In 1980

- *Average gasoline consumption* in U.S. cities was nearly twice as high as in Australian cities with 446 gallons per capita compared to 227 gallons and much higher than European and Asia cities (Newman and Kenworthy 1989). The authors conclude that this difference is only partially explained by gasoline prices, income and vehicle efficiency. What is significant is urban structure.

Mees (1994 cited in Freestone 1997: 256) identifies the underlying differences between the cities of two countries as the Australian city's "long history of suburban diffusion, good public transportation systems, 'paucity of urban freeways', local government and planning systems promoting less 'open slather' development, and widespread gentrification and retention of status by inner and middle distance suburbs". Central cities maintained their status as the most important employment center in Australian cities. The socio-spatial structure of privilege is the "reverse of the American donut" (Freestone 1997: 255).

3. A Comparison of the States of Florida and Queensland

In addition to the above highlighted similarities there are parts of the two countries that particularly resemble each other. Particularly the southern parts of the states of Florida and Queensland have similar physical characteristics that led to the similarities in their development histories and structures in spite of their different planning regimes.

3.1. Physical and Demographic Characteristics

The two states are similar in terms of physical characteristics such as geography and climate as well as population growth trends. The state of Queensland covers an area of 1,732,934 km² (669,090 square miles) and the SEQ region covers 22,310 km² (8,613 square miles) (Wyeth et al. 2000). Florida covers 151,670 km² (58,560 square miles) (State of Florida 2009). South Florida Regional Planning Council is the closest to a defined planning region in Florida that could be compared to SEQ. It covers a total area of 17,840 km² (6,888 square miles) and has a population of close to 4 million people (South Florida Regional Planning Council 2004). This is comparable to SEQ in population.

Both states are dubbed the Sunshine State in their respective countries. Climate of Queensland ranges from tropical in the north to subtropical in the south. The only subtropical climate in the continental U.S. is in Southern Florida and it is also located within a high-velocity cyclone zone (Abbate 2006). Queensland is also subject to cyclones. The Queensland coastal zone extends more than 9500 kilometers (5900 miles). Florida has 3363 kilometers (2276 miles) of coastline. Both have fragile environments and subject to more floods and droughts. Furthermore, both South Florida and SEQ have greater population pressure and older than average populations than the rest of their states and countries. The move from rustbelt to sunbelt in the U.S. was paralleled in Australia.

3.2. Development Histories and Structure

Similarities are also seen in the development history and structure of the two states. In fact, some parts of South Florida such as Fort Lauderdale and SEQ such as the Gold Coast are virtually indistinguishable. Both states are late bloomers and both are experiencing higher than average growth rates within their respective countries as a result of being desirable tourism and retirement destinations, both of them have very fragile environments and

potentially growing vulnerability to climate change, and both try to cope with the development pressures they are facing by using growth management programs.

Both states started developing later than the rest of their respective countries. The hot and humid climate and mosquito infested swamps were not habitable until the swamps were drained and air conditioning became widespread in Florida. Florida was the least populated and most impoverished state in the South at the beginning of the 19th century (Nelson 1989). By the end of the century, it was South's largest and most affluent state, 4th largest in the nation in population size and among the ten fastest growing states (U.S. Bureau of the Census 2000). Florida was the 4th fastest growing state in the U.S. between 1980-1990 and 7th between 1990-2007 (U.S. Census Bureau 2009a). There were no growth controls for a long time at the beginning of these fast developments. Troxler (2009) claims Florida choked on wild, sprawling construction from World War II until the 1980s when the growth management laws were put in place. Ben-Zadok (2005: 2169) explains that "Florida's massive growth from 2.7 million in 1950 to 9.5 million people in 1980 has precipitated state acts in 1972 and 1975. The legislation aimed to balance growth with the protection of natural resources."

Queensland is the growth state of Australia, and SEQ is still the growth region of the nation. With 18.2 percent of Australia's population in 1996, Queensland accounted for 36.8 percent of the nation's population growth between 1991 and 1996 (Minnery and Barker 1998). Over the same period, SEQ accounted for 25.3 percent of the growth with 11.7 percent of the national population and 77 percent of the State's total growth. SEQ is attracting both interstate and intrastate migration as part of the sunbelt phenomenon. Nine of the ten fastest growing local government areas in the State are near or along SEQ coastline.

Population growth in SEQ has taken place primarily along the coast or eastern corridor (referred to as the 'seachange' phenomenon) e.g. Gold Coast City, Brisbane, Maroochy Shire (see Figure 1). The region overall is characterised by low housing densities, typical in the Australian context. Finally, the region has experienced a significant fragmentation of rural lands and bushlands for rural residential development on the fringes of urban areas and in rural areas (Office of Urban Management 2005: 8).

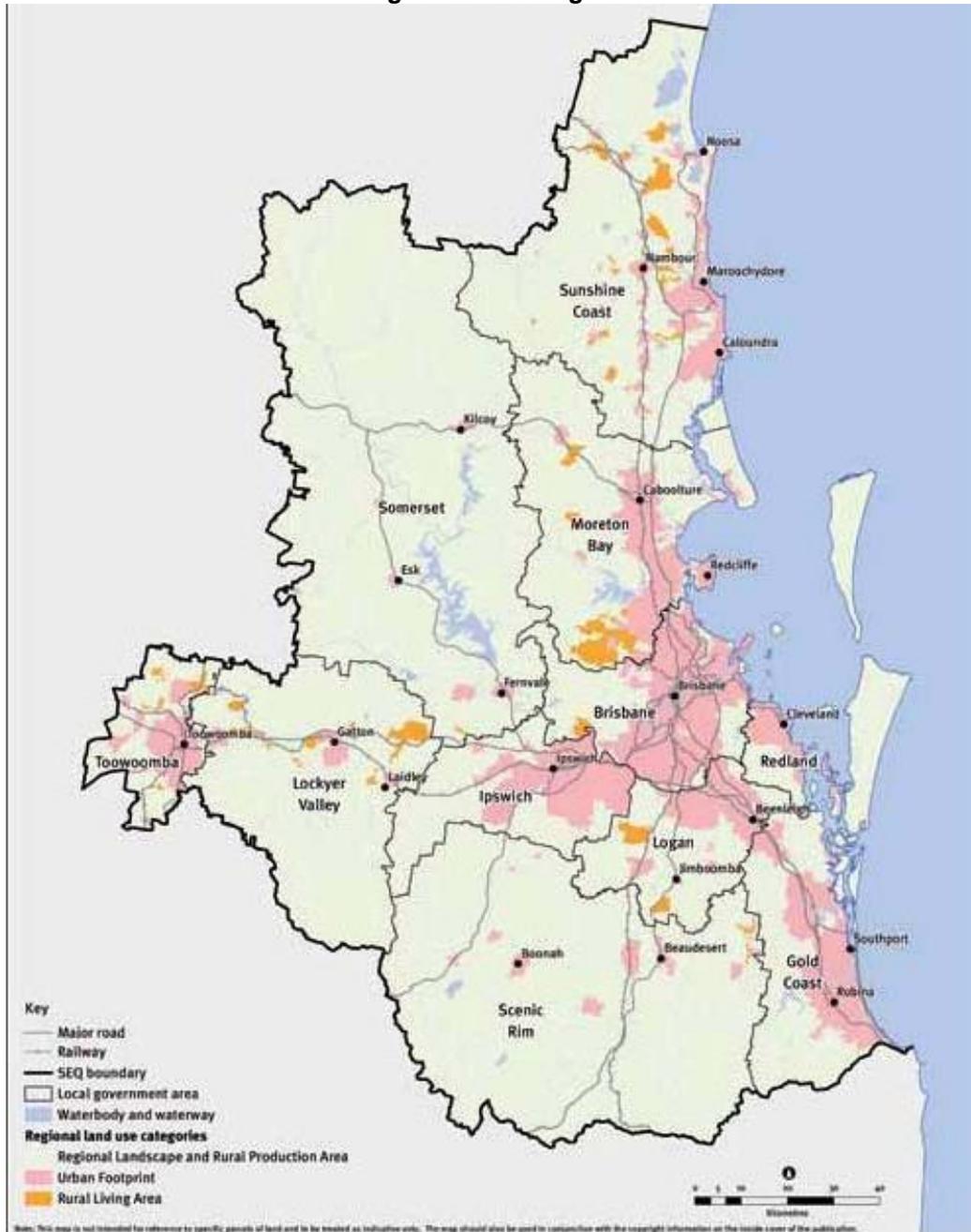
Queensland is the only Australian state that has more than one large city. Unlike other capital cities in the country Brisbane accounts for a relatively low proportion of the State's population (45.5 percent in 1996). Minnery and Barker (1998) diagnose the low-density settlement across a vast area that created a poly-centric urban form as one key feature which distinguishes growth in this region from other metropolitan areas. This low-density sprawling urban growth created difficulties for public sector managers in planning for and providing infrastructure and services (Roberts et al, 1996; Stimson et al, 1997). Furthermore, as Margerum (2002: 181) indicates "this rapid growth and urban sprawl have threatened the very amenities that attract people to the region."

3.3. Planning Regimes and Growth Management Programs

While the states in Australia have more power than in the U.S. including planning authority Queensland historically had a free market approach to development under conservative rule (McKenzie 1997). Collie (1996) reports that unlike other states which used State Planning Authorities/Commissions as a fourth tier of government for land-use and infrastructure planning, development and co-ordination urban and regional planning in Queensland was essentially devoid of any significant direction at state level until 1995. This is not that different from Florida which has a history of promoting growth through land grants (Kelly, 1993).

McKenzie (1997) indicates that the change to a Labor Government in 1989 was instrumental in the State Government intervention in urban and regional development in addition to fast growth not only in urban growth centres such as Brisbane and the Gold Coast, but also in rural and semi-rural shires in the region.

Figure 1. SEQ Region



Source: Queensland Government (2009)

“Local governments in Queensland are creatures of the state government and have contiguous boundaries without any overlapping authority. Although the state government must approve local government plans, state intervention has historically been limited, except to ensure that local governments recognize state issues such as regional transport or issues affecting state land. This has created a culture of strong local government control” (Margerum 2002: 181). The lack of state involvement in planning issues resulted in Queensland local governments holding principal responsibility for planning and local

authorities are politically much more significant than elsewhere in the country (Wyeth et al. 2000).

The potential costs of unplanned, uncoordinated development to the community and the release of new population projections for SEQ prompted the state government to organize the SEQ2001 Growth Management Conference in December 1990. More than 250 representatives of Commonwealth, State and Local Governments, business and industry, the trade unions, professional groups, and community organizations were involved. Abbott (1996 cited in Wyeth et al. 2000: 112) writes that the conference showed:

that people feared that growth and development were out of control . . . the loss of valued agricultural areas, of bushland and coastal environment areas, of the relaxed Brisbane lifestyle, and (of) the region turning into a Los Angeles type urban sprawl from Noosa to Coolangatta.

The conference led to an agreement to develop a cooperative model for growth management in the region. In 1994, a draft regional framework for managing growth was produced, and was adopted in 1995. But issues such as limited commonwealth involvement, failure to coordinate state infrastructure funding, limited resourcing and implementation depending on voluntary agreement created major obstacles, primarily due to a somewhat variable willingness to participate in the process on the part of individual local governments. The SEQ Regional Framework for Growth Management was developed as a governance partnership involving the Queensland state government, the South East Queensland Regional Organisation of Councils and the Commonwealth. The approach was lacking directive powers needed for efficient urban management, but it pointed to the possibilities for cooperative urban regional governance, involving all three tiers of government, and politically was arguably a necessary precursor to the more directive statutory based system that was to follow (Gleeson 2007: 79). In February 2004, the state government announced the creation of a new office of urban management (OUM), followed by an Integrated Planning Act (IPA) amendment to establish the SEQ Regional Plan as a statutory instrument. The Integrated Planning Act 1997 provided a comprehensive framework for managing growth and change within Queensland. It included several elements: the performance based Integrated Development Assessment System (IDAS), local government planning schemes, state planning policies, regional planning schemes, and State department infrastructure planning.

The SEQ Regional Plan 2005-2026 was defined as both a statutory and a planning instrument under different pieces of legislation^{iv}. It had direct effects on infrastructure provision, urban growth boundaries, and resource allocation, and indirect effects through the amendment and alignment of local government planning schemes and state plans and policies (Office of Urban Management 2005: 2) e.g. local planning schemes contradicting the Regional Plan had to be amended. Additional key components of regional planning in SEQ included until 2009 the SEQ Infrastructure Plan and Program (SEQIPP), local growth management strategies demonstrating how local councils would accommodate the projected increase in the number of new dwellings in terms of housing, employment, infrastructure and open space, prepared by local governments, local priority infrastructure plans, and a monitoring system through sustainability indicators.

Among its key strategic directions, the SEQ Regional Plan proposed an alternative to low density residential development by supporting a move towards more compact forms of urban development with higher densities in selected areas (major development areas), by creating an urban footprint (in essence an urban growth boundary) and its bounding Regional Landscape and Rural Production Area (representing 80% of the SEQ region), by using regulatory provisions to ensure that developments are consistent with the regional plan and by linking the regional plan with state infrastructure and service delivery programs and budgetary processes.

The SEQ Regional Plan's main strength has been identified as its statutory force and focus on key issues of environmental and rural conservation, access and transport and urban form. The parallel production of the SEQIPP for transport, power, water and social infrastructure of hospitals and schools with a 20-year time span and provision for annual review, also contributed to its success. Local Growth Management Strategies have also been highly effective. Because the SEQIPP provides local governments with the necessary funded support to fulfil these implementation plans, local governments have had more incentives to meet the requirements to accommodate their allocated share of dwelling increases within the Urban Footprint, protect the Regional Landscape and Rural Production Zone and encourage transit orientated development (Margerum et al. 2008). However, the regional plan has been criticised for its lack of clear objectives and performance indicators, but also for the absence of a strong and inclusive accountability framework involving local actors and the lack of effective channels of public engagement.

During 2008 and 2009, the Queensland Government undertook a review of the SEQ Regional Plan 2005-26 to respond to important growth management issues that have emerged since its release, including continued high population growth, housing affordability pressures, transport congestion, and climate change (Queensland Government 2009). The new regional plan was released in July 2009. Since its release, the new plan was considered by some as a step back from the previous plan and has been criticised for its loss of statutory power.

Florida's growth management program was famous for the three Cs of concurrency (the requirement from local governments to ensure that funds and plans are in place to satisfy the demand for recreation, transportation, sewer, solid waste, drainage and potable water services created by any new development they approve), consistency (the requirement that state, regional and local plans be consistent with the goals and policies of the growth management program), and containment (to prevent urban sprawl) (DeGrove and Metzger 1993). In SEQ the SEQIPP parallels the concurrency element. While Florida's GMA required local plans to be consistent with its objectives, SEQ Regional Plan requires "any plans, policies and codes that relate to the SEQ region being prepared or amended by state agencies must reflect and align with the Regional Plan" and local growth management strategies to be prepared (Queensland Government 2009) providing consistency. The SEQRPs urban footprint is an urban growth boundary that contains development.

4. An Overview of the Latest Developments in the Planning Frameworks

On June 1st 2009 the *Community Renewal Act* replaced Florida's 1985 Growth Management Act. Opponents of the act, including some local governments which sued the state, argue that the act is a violation of the state constitution and label it as "a developer relief act" (Caputo, 2009). The law, which largely exempts builders from building infrastructure to accommodate the needs of new construction - an elimination of the much praised concurrency requirement - and eliminates the review process for some large developments is welcomed by the development industry who argued these changes were "needed to spur the state's development-based economy." Legislature views the act as the jump start the state economy needs after the global financial crisis and expect long-time shelved projects to start. Opponents who point to Florida's oversupply of residential and office space argue the state of the economy is an excuse to weaken the laws and transfer the burden of paying for infrastructure costs from the developers to the taxpayers (Hiassen 2009, Editorial 2009) Furthermore, environmentalists and local governments claim the new law will "exacerbate Florida's housing glut, increase traffic delays and allow uncontrolled development in rural areas" (Klas 2009). "It's a recipe for more reckless sprawl" (Hiassen, 2009). Even the change

in the name of the act governing development in the state of Florida is indicative of the shift in its focus from managing growth to community renewal (development?)

Similar to Florida in Queensland the *Sustainable Planning Act (SPA) 2009* was opposed with claims that this is another hallmark of the government's "mantra of growth at all costs" (McCarthy 2009). Again, similar to Florida the development interests (Property Council of Australia) gave unequivocal and glowing support. One purpose of the Act is to streamline land use planning and development framework to achieve more timely approvals. However the new amendments may result in avoiding the necessary evaluation of applications that give rise to detailed ecological assessments, sustainability principles and subsequent recommendations.

SPA was not the only change in the planning framework of Queensland. After the change of government in March 2012 a series of new policies started reshaping the planning system of the state.

While the new government is continuing the statutory regional planning tradition of its predecessor their objectives are somewhat different. Department of Local Government and Planning has been renamed Department of State Development, Infrastructure and Planning (DSDIP) and its website which was 'actively reviewed and updated to align with new state government priorities' makes clear that the new government's focus is on economic development and re-empowering local government is among its priorities (DSDIP 2012b). The new generation of statutory regional plans are given priority to 'aim to foster diverse and strong economic growth; plan and prioritise infrastructure; manage impacts on the environment; and where necessary, plan for urban growth and resolve land use conflicts such as those arising between agricultural and mining activities' (DSDIP 2012c).

In August 2012 the new government released *Temporary State Planning Policy 2/12 Planning for Prosperity*. The document highlights that the planning system will facilitate economic growth in Queensland through focusing on tourism, agriculture, resources and construction and by cutting red tape and regulation (DSDIP 2012a). The purpose of the Policy is to ensure that economic growth is facilitated by local and state plans, and is not adversely impacted by planning processes. The Policy will guide the amendment and preparation of regional plans. LNP's pre-election policy on 'Protecting the Scenic Rim' was critical of the South East Queensland Regional Plan and a review was promised within three years of taking government (LNP 2012).

In September the Deputy Premier and Minister for State Development, Infrastructure and Planning, Jeff Seeney, introduced the *Sustainable Planning and Other Legislation Amendment Bill (2012)* into parliament, which included specific amendments designed to cut 'green tape' in environmental protection legislation (Part 4), changes to coastal protection legislation (Part 3), and alterations to the Sustainable Planning Act (Part 7). In his speech to parliament the Minister pointed out that:

The state government is committed to restoring efficiency and consistency to the planning and development assessment system to get the property and construction industries back on track. As promised, our government is well underway in reforming and simplifying the planning framework through removing unnecessary regulation from the system and fixing the Sustainable Planning Act 2009 (Queensland Parliament 2012: 1945).

In October 2012 Department of State Development, Infrastructure and Planning released the *Draft Coastal Protection State Planning Regulatory Provision: Protecting the Coastal Environment (the Draft SPRP)* (DSDIP 2012d). This new policy suspended parts of the Queensland Coastal Plan and some of the regional plans. Queensland Coastal Plan

prepared by the previous Labor government was composed of two policies: State Policy for Coastal Management and State Planning Policy 3/11: Coastal Protection. The new Draft SPRP suspended the operation of the State Planning Policy 3/11: Coastal Protection which required coastal development to consider the projected effects of climate change such as a sea-level rise and an increase in the maximum cyclone intensity. It also suspends the operation of parts 1.4.3 and 2.4 of the SEQ Regional Plan which required consistency with the Coastal Plan in general as well potential sea level rise projections specifically.

In April 2013 Newman government released the *Draft State Planning Policy* (DSDIP 2013) which sets out the state interests and related policies that should be used in preparing or amending local planning instruments and regional plans. It identifies a series of principles to support and guide the development of efficient and effective planning instruments. While the principles mention sustainability and protection of natural environment the implementation strategies are clearly focused on facilitating development. The government is currently preparing the *Queensland Plan*, a 30-year vision for the state.

These developments suggest that there has been a significant shift in state-level planning and climate change adaption policies which affect not only South East Queensland but the whole state. Neither climate change nor adaptation has been a priority in any of the LNP's policies, either before or after the election, and it does not appear in any of the legislative changes outlined above. The party has been consistent in its pursuit of its 'four pillar' policy of economic development, with environmental and planning laws being streamlined if they are considered as inhibiting development. Further, there has been a deliberate move to hand back more responsibilities to the local level of government.

5. Conclusions

Growth Management programs of both states have been praised for being pioneers but also criticized for ineffectiveness (Chapin et al. 2007). Their subsequent weakening/removal reframes the situation. In spite of the striking similarities between the states of Queensland and Florida no comparisons have been made to date. At a time when the two states are facing similar problems, trying similar methods to deal with them and changing economic conditions forcing a setback on growth controls they can learn from each other to deal with their problems more effectively. This paper sets up a framework and proposes such a comparison.

References

- Abbate, Anthony. 2006. Changes in Latitude, Changes in Attitude: A Paradigm Shift in Southern Florida. Subtropical Cities 2006 Conference Proceedings: Achieving Ecologically Sustainable Urbanism in a Subtropical Built Environment. Published by Queensland University of Technology (QUT) Centre for Subtropical Design, November. <http://www.subtropicalcities2006.qut.edu.au/Papers.html>
- Abbott, J. 1996. Preparation for the SEQ 2001 Regional Framework for Growth Management: Report to the Australian Planning Officials Group. SEQ 2001 Regional Resource Unit, Queensland Department of Housing, Local Government and Planning (unpublished).
- Australian Bureau of Statistics. 2006. Census Quick Stats. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6523.0>
- Bell P. and R. Bell. 1993. *Implicated: The United States in Australia*. Melbourne: Oxford University Press.
- Ben-Zadok, Efraim. 2005. Consistency, Concurrency and Compact Development: Three Faces of Growth Management Implementation in Florida. *Urban Studies*. 42 (12): 2167 - 2190.

- Caputo, Marc. July 9, 2009. Local Governments Sue over Florida's New Growth-Management Law. *The Miami Herald*. <http://www.miamiherald.com/news/florida/story/1133646.html>
- Chapin, Timothy S., Charles E. Connerly, and Harrison T. Higgins. 2007. *The 1985 Florida GMA: Satan or Savior?* In Timothy S. Chapin, Charles E. Connerly, and Harrison T. Higgins (Eds.) *Growth Management in Florida: Planning for Paradise*. (pp. 305-311). Hampshire, England: Ashgate.
- Connor, G. J. 1955. Civic Development, *Australian Municipal Journal* 35 (641): 28, 31.
- Department of State Development, Infrastructure and Planning (DSDIP). 2012a. 'Temporary State Planning Policy 2/12 Planning for Prosperity'. Queensland Government, Brisbane.
- DSDIP. 2012b. URL: <<http://dsdip.qld.gov.au/>>. Consulted 20 May 2012.
- DSDIP. 2012c. Regional Planning. URL: <<http://www.dsdip.qld.gov.au/regional-planning/>>. Consulted 9 August 2012.
- DSDIP. 2012d. 'Draft Coastal Protection State Planning Regulatory Provision: Protecting the Coastal Environment'. Queensland Government, Brisbane.
- DSDIP. 2013. 'Draft State Planning Policy'. Queensland Government, Brisbane.
- DeGrove, John M. and Patricia M. Metzger. 1993. Growth Management and the Integrated Roles of State, Regional, and Local Governments. In Jay M. Stein (Ed.) *Growth Management: The Planning Challenge of the 1990s*. (pp.3-17). Newbury Park, California: Sage Publications.
- Editorial. July 11, 2009. Local Perspectives. *The Miami Herald*. <http://www.miamiherald.com/opinion/editorials/story/1136925.html>
- Freestone, Robert. 1997. New Suburban Centers: An Australian Perspective. *Landscape and Urban Planning* 36 (4): 247-257. May.
- Freestone, R. 2000. Master Plans and Planning Commissions in the 1920s: The Australian Experience, *Planning Perspectives* 15 (3): 301-322.
- Freestone, Robert. 2004. The Americanization of Australian Planning. *Journal of Planning History*. 3 (3): 187-214.
- Freestone, Robert and Peter Murphy. 1998. Metropolitan Restructuring and Suburban Employment Centers: Cross- Cultural Perspectives on the Australian Experience. *Journal of the American Planning Association*. 64 (3): 286-297.
- Gleeson, B. 2007. Rescuing Urban Regions: The Federal Agenda. In A.J. Brown and J. Bellamy (Eds), *Federalism and Regionalism in Australia: New Approaches, New Institutions?* (pp. 71-82). Canberra: ANU Press.
- Hiassen, Carl. July 26, 2009. And the Bucks Keep Flowing in. *The Miami Herald*. http://www.miamiherald.com/news/issues_ideas/story/1156985.html
- Kelly, Eric Damian. 1993. *Managing Community Growth: Policies, Techniques, and Impacts*. Westport: Praeger.
- Kenworthy, Jeffrey R. and Felix B. Laube. 1996. Automobile Dependence in Cities: An International Comparison of Urban Transport and Land Use Patterns with Implications for Sustainability. *Environmental Impact Assessment Review* 16 (4-6): 279-308. July-November.
- Klas, Mary Ellen. May 26, 2009. Legislation to Ease Development Rules Disputed. *The Miami Herald*. <http://www.miamiherald.com/news/politics/florida/story/1065316.html>
- Liberal National Party (LNP) 2012. 'Protecting the Scenic Rim'. LNP, Brisbane.
- Margerum, R., P. Heywood, S. Mayere and N. Sipe 2008. Key Result Areas and Key Performance Indicators for Regional Planning. Final report prepared for the Queensland Department of Infrastructure and Planning, Brisbane, Australia.
- Margerum, Richard D. 1995. Integrated Watershed Management: Comparing Selected Experiences in the U.S. and Australia. *Water Resources Update*, 100: 36-47.
- Margerum, Richard D. 2002. Evaluating Collaborative Planning: Implications from an Empirical Analysis of Growth Management. *Journal of the American Planning Association*. 68(2): 179-93. Spring.
- McCarthy, Narelle. June 20, 2009. Outrage over Sustainable Planning Bill. <http://econews.org.au/outrage-over-sustainable-planning-bill/>

- McKenzie, Fiona. 1997. Growth Management or Encouragement? A Critical Review of Land Use Policies Affecting Australia's Major Exurban Regions, *Urban Policy and Research*. 15(2): 83-101.
- Mees, Paul. 1994. Continuity and Change in 'Marvellous Melbourne.' *Urban Futures* (March): 1-11.
- Minnery, John and Ross Barker. 1998. The More Things Change... Brisbane and South East Queensland. *Urban Policy and Research*. 16(2):147-152.
- Minnery J. and B. Bajracharya. 1999. Visions, Planning Processes and Outcomes, *Australian Planner* 36 (1): 33-41.
- Nelson, Arthur C. 1989. Preventing Urban Sprawl: Florida's Cities are Dared to Be Great. *Quality Cities*. December: 16-20.
- Newman, Peter W. G. and Jeffrey R Kenworthy. 1989. Gasoline Consumption and Cities, *Journal of the American Planning Association*. 55 (1): 24-37.
- Nichols, D. 1998. "Saxil Tuxen Goes to America: U.S. Influences on Melbourne Planning and Housing Reform in the 1920s," in R. Freestone, ed., *The 20th Century Urban Planning Experience: Proceedings of the 8th International Planning History Conference*. Sydney: University of New South Wales.
- Office of Urban Management. 2005. South East Queensland Regional Plan 2005-2026. Brisbane, Queensland, Australia.
- Parkin, Andrew. 1982. *Governing the Cities: The Australian Experience in Perspective*. Melbourne: Macmillan.
- Population Reference Bureau. 2012. World Population Data Sheet 2012. http://www.prb.org/pdf12/2012-population-data-sheet_eng.pdf
- Queensland Government. July 2009. South East Queensland Regional Plan 2009–2031. Brisbane: The State of Queensland (Queensland Department of Infrastructure and Planning).
- Queensland Parliament (2012) Hansard. Record of Proceedings (Proof) for Thursday, 13 September. Brisbane.
- South Florida Regional Planning Council. June 7, 2004. Strategic Regional Policy Plan. <http://www.sfrpc.com/ftp/pub/srpp/SRPP%2006-07-04.pdf>
- State of Florida. Florida Quick Facts <http://www.stateoflouisiana.com/Portal/DesktopDefault.aspx?tabid=95> Accessed on September 28, 2009.
- The World Bank. 2013. GDP (current US\$). http://data.worldbank.org/indicator/NY.GDP.MKTP.CD?order=wbapi_data_value_2012+wbapi_data_value+wbapi_data_value-last&sort=desc Accessed on July 31, 2013.
- Troxler, Howard. April 30, 2009. Is Florida without Growth Management What You Want? St. Petersburg Times. <http://www.tampabay.com/opinion/columns/article996686.ece>
- U.S. Census Bureau. 2009a. The 2009 Statistical Abstract. <http://www.census.gov/compendia/statab/2009edition.html>
- U.S. Census Bureau. 2009b. State & County QuickFacts. <http://quickfacts.census.gov/qfd/states/12000.html> Last Revised: Friday, 04-Sep-2009.
- U.S. Census Bureau. 2007. Median Household Income 2007. http://factfinder.census.gov/servlet/ThematicMapFramesetServlet?_bm=y&-geo_id=01000US&-tm_name=ACS_2007_3YR_G00_M00704&-ds_name=ACS_2007_3YR_G00_-MapEvent=displayBy&-dBy=040
- U.S. Bureau of Census. 2000. Statistical Abstract of the United States, 2000-1996. <http://www.census.gov/prod/2001pubs/statab/sec01.pdf>
- Ward, S. V. 2002. *Planning the Twentieth-Century City: The Advanced Capitalist World*. Chichester: John Wiley.
- Worthington, Andrew and Brian Dollery. 2000. Can Australian Local Government Play a Meaningful Role in the Development of Social Capital in Disadvantaged Rural Communities? *Australian Journal of Social Issues* 35(4): 349-361.
- Wright, B. 2001. *Expectations of a Better World: Planning Australian Communities*. Canberra: RAPI.

Wyeth, Elwyn, John Minnery and Arthur Preston. 2000. Application of Quality Management Criteria to Regional Growth Management: Lessons from South East Queensland. *Cities*. 17(2): 111–121.

ⁱ United States 12.9 % and Australia 23.8 % in 2005.

ⁱⁱ 2008 estimate (U.S. Census Bureau 2009b)

ⁱⁱⁱ These may have their roots at the planning commissions of the 1920s which were metropolitan-wide rather than confined to the central city as their American counterparts (Freestone 2004). "With local government uniformly weak and fragmented, state governments were the only authorities capable of taking a synoptic approach to metropolitan questions. Their tentative interest in town planning matters in the 1920s came on top of established major responsibilities in the provision of metropolitanwide public services (water, sewerage, public transport, education etc). The political obstacles to adoption of a cross-jurisdictional regional planning commission concept were thus less formidable than in American urban government" (Freestone 2000: 317).

^{iv} The statutory Instrument Act 1992 and the Integrated Planning Act 1997.

Using spatial modelling to develop flood risk and climate adaptation capacity metrics for vulnerability assessments of urban community and critical water supply infrastructure

Rodolfo ESPADA JR., Armando APAN, and Kevin MCDOUGALL
School of Civil Engineering and Surveying and Australian Centre for Sustainable Catchments, University of Southern Queensland, Australia

1. Introduction

The application of vulnerability assessment in the water supply network takes into account several elements which include the characterisation of the water system, determination of critical assets, analysis of current risk (i.e. flood risk), and evaluation of existing countermeasures (EPA 2002). As a highly significant tool, vulnerability assessment of water supply network provides information to guide and prioritise plans for water supply security and mitigating measures against operational damages from destructive events such as floods.

A series of damaging floods during December 2010 to January 2011 hit the State of Queensland, in Australia. Consequently, over 200,000 people were affected (McDougall 2012), 29,000 homes and businesses were damaged and 37 people were killed (QRA 2011 and QFCI 2012). The damage was expected to cost the Australian economy triple the original estimate of AU\$10 billion (ABC 2011). Specifically, in January 2011, the city of Brisbane has experienced a major flood event inundating more than 14,000 properties (McDougall 2012). The government spent almost AU\$7 billion rebuilding and upgrading the State's infrastructures (QFCI 2012, QRA 2011) due to flooding.

In this study, the vulnerability of water supply infrastructure to flood hazard was examined. During the January 2011 flood, water supply was lost to few suburbs in the Brisbane local government area (QUU 2011) with Queensland Urban Utilities (QUU) provided alternative water supplies to water-deficient communities (QFCI 2011). In general, the daily drinking water requirements of Brisbane area were significantly available during the flood event; however, water supply was constrained by a major challenge caused by the interruption of water treatment operations at Mt. Crosby and North Pine dam due to water turbidity and other problems (QFCI 2011). This situation created a potentially serious water supply shortage in Brisbane not only during the January 2011 flood but was also realised during the January 2013 flood (Keller 2013). This "dirty water" event reached turbidity levels up to four times more than it was during the January 2011 flood and reduced the quality of drinking water for several days (Keller 2013, News Limited 2013).

To enquire into matters arising out of the 2010/2011 floods, the Queensland Floods Commission of Inquiry (QFCI) was established pursuant to the *Commission of Inquiry Act 1950* (QFCI 2012). Investigations and recommendations were made as to how future flood damage can be minimised across essential infrastructures such as electricity, water supply, sewerage, storm water, telecommunications, and roads and rails.

The development of flood risk and adaptation capacity metrics is of considerable importance considering the urgency and relevancy of the issues at hand. However, doing so offers a great challenge due to a wide variety of adaptations as well as the dynamic nature of various environmental and socio-economic factors (Szlafsztein 2008). This research problem is further exacerbated by inductive argumentation which particularly pertains to the sufficiency of indicating variables and availability of statistical models in climate risk assessment. Hinkel (2011) emphasised that when these indicating variables are aggregated with deductive approach (e.g. expert judgment) or by normative approach (e.g. equal weighting), the

delivery of robust results is an issue due to subjective judgments in the former case and the multi-dimensionality of variables to different stakeholders in the latter case. Another challenge that further aggravates the issue is the process of selecting the indicating variables to indicate flood risk and its application to adaptation capacity assessment.

Furthermore, there is a limited research consideration on the geographical interdependency of critical infrastructure protection modelling. In a research survey of U.S. and international research on critical infrastructure interdependency modeling conducted by Pederson *et al.* (2006), modeling and simulation that provide geospatial relationships were excluded in their analysis. Because floods exert spatially correlated disturbances to water supply infrastructures and consequently disrupt water supply services to community, a research question arises as to how geographic interdependency and spatial autocorrelation operate in flood risk assessment.

To sum up, this study was conducted to address the following research questions:

1. How can indicating variables (i.e. hazard, physical and social vulnerability, and exposure) be better use in the integrated flood risk and climate adaptation capacity assessment model for assessing the vulnerability of urban community and critical water supply infrastructure?
2. Despite advances in water engineering, how can spatial technology be of help to reduce the massive flood impacts on urban community and critical water supply infrastructure and mitigate the potential spread of water-borne health problems?
3. What are the possible applications and implications of the generated modelling technique to flood insurance and land-use planning policies?

Specifically, the objectives of this study were:

1. To evaluate indicating variables in generating flood risk and climate adaptation capacity metrics of an urban area which had been exposed to flood hazard; and
2. To generate spatially-explicit flood risk and climate adaptation capacity metrics that will aid to address flood risk management and climate resiliency issues of an urban area and critical water supply infrastructure.

2. Study Area

Comprising an area of 2,200 ha, the study area is located within the 22 core suburbs of Brisbane City, the Queensland's capital in Australia (Figure 1). The City is traversed by the 345-kilometer long Brisbane River, which is the longest river in South East Queensland and flows down from Mount Stanley to Moreton Bay (Middelman 2002). Including the Lockyer Creek and Bremer River catchments, around 6,500 km² (approximately 50%) of the Brisbane River catchment is below Wivenhoe and Somerset Dams (Robinson 2011). Completed in 1984, the Wivenhoe Dam was built as a dual-purpose storage for both drinking water (which supplies water to the City) and flood mitigation (SEQ Water 2012).

Brisbane City had an \$85 billion economy in 2011. However, the City's economic progress together with more than a million estimated residents, had been hampered and devastated recently by 2010/2011 floods. Flood waters in Brisbane peaked at 4.46 metres with significant damage to transport, infrastructure, and residential properties (Queensland Museum 2011).

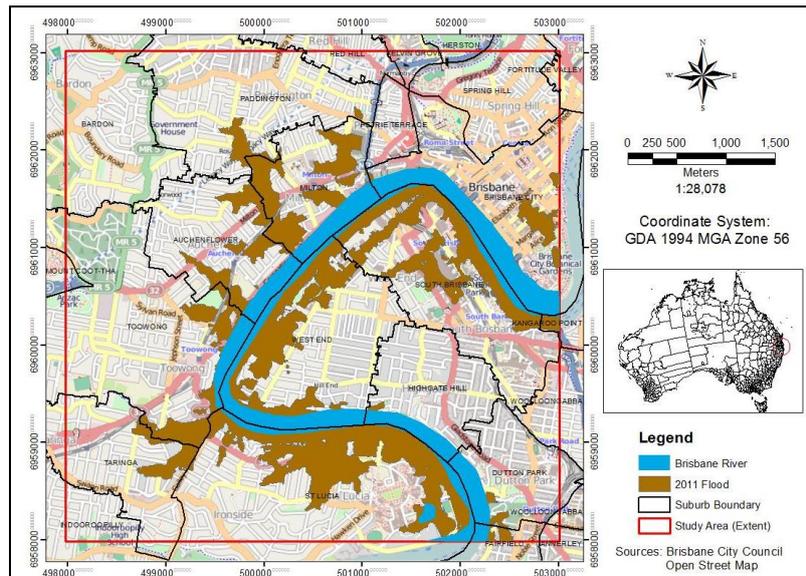


Figure 1. The extent of study area

3. Research Methods

This study is part of an ongoing research project which attempts to develop an integrated approach of formulating adaptation strategies to reduce vulnerability of an urban community and infrastructure assets from floods and the long-term effects of climate change. Figure 2 is the input-process-output (IPO) model specifically used in this study.

Under the input component, the flood hazard, social and physical vulnerability, and exposure indicators were identified based on the availability of datasets and assessed following the flood risk framework. Under the process component, four main spatial analytical challenges were addressed to generate the flood risk and adaptation capacity metrics and assess water supply vulnerability: 1) transformation and standardisation of indicating variables; 2) topological cluster analysis using the self-organising neural network (SONN); 3) quantification of risk and adaptation capacity metrics; and 4) network analysis (Figure 2) (Espada *et al.* 2012, 2013).

This study was also challenged to apply the concept of geographical interdependency using the spatial autocorrelation techniques with emphasis on Global Moran's I and Cluster and Outlier Analysis of Anselin Local Moran's I. Summarising the initial outputs using the Inverse Distance Weight (IDW) method of point data interpolation, the generated raster maps were then carefully analysed to assign categorised values for each indicating variable that generally explain perceived level of flood risk.

To identify which indicating variables can be potentially included in the weighted overlay analysis, the pattern of similarity of these variables was analysed by using the self-organising neural network (SONN) mapping tool in MATLAB version R2011b program (The Mathworks, Inc. 2013). With the Bayesian joint conditional probable weights assigned to selected indicating variables, the flood risk metrics were quantified by using the modified fuzzy gamma function to resolve the mathematical issues (i.e. increasing or decreasing effects) of implementing Equations 1 and 2. Applying Equation 6, the climate adaptation capacity metrics were generated.

The final outputs (i.e. flood risk and adaptation capacity metrics) were then applied in assessing the vulnerability of urban community in general and critical water supply infrastructure in particular.

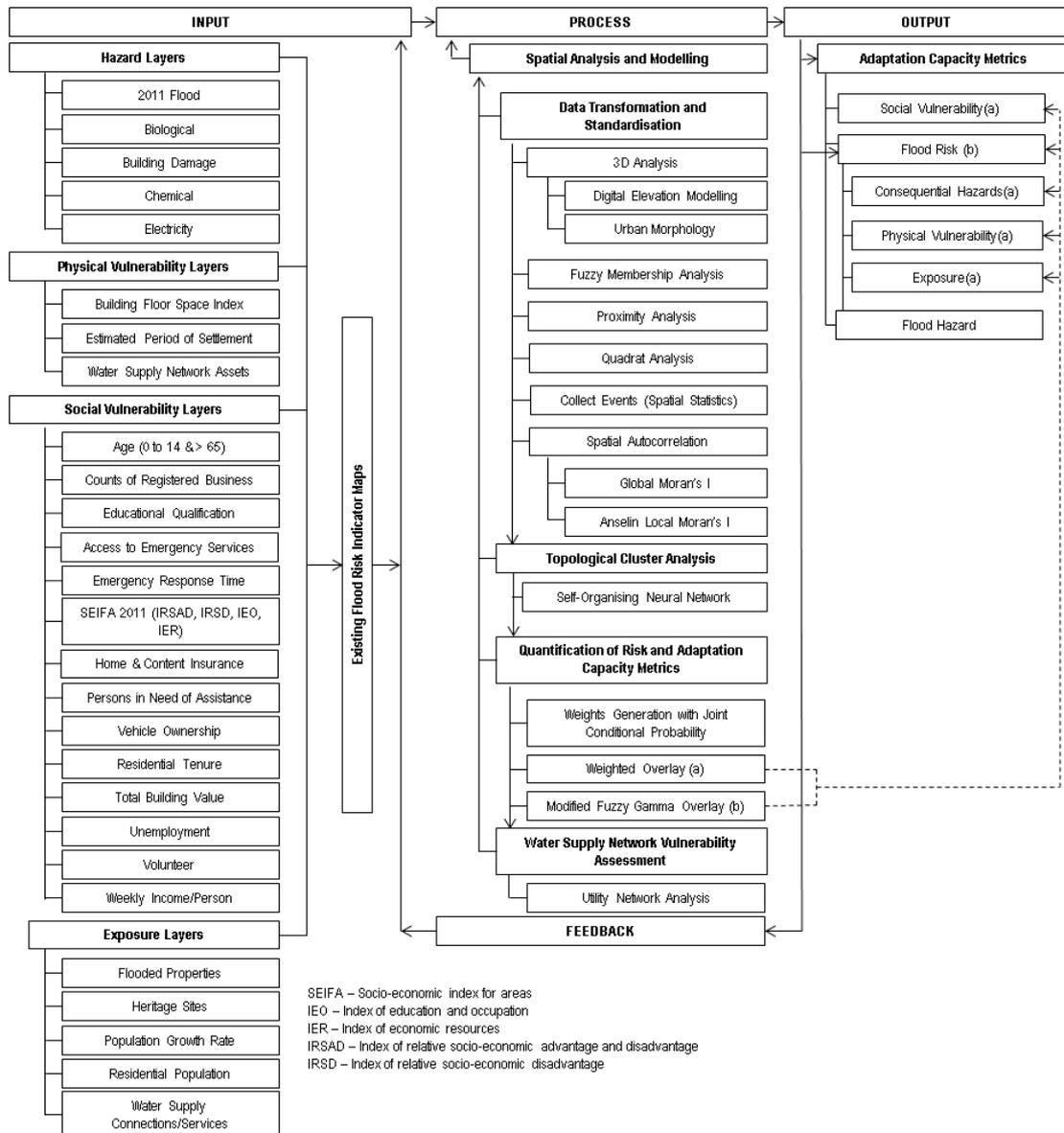


Figure 2. The input-process-output (IPO) model used in the study (Espada et al. 2012, 2013)

4. Flood Risk and Adaptation Capacity Modelling

4.1. Key Concepts and Data Inputs

Expressed in mathematical forms, risk can be stated as (Mirfenderesk and Corkill 2009; Downing 2002; Hughey and Bell 2010):

$$\text{Risk} = \text{Hazard} * \text{Vulnerability} * \text{Exposure} \quad \text{Eq. 1.}$$

$$\text{Risk} = \text{Hazard} + \text{Vulnerability} \quad \text{Eq. 2.}$$

$$\text{Risk} = \text{Hazard} + \text{Vulnerability} - \text{Adaptation Capacity} \quad \text{Eq. 3.}$$

As shown in these equations, the terms hazard, vulnerability, exposure, adaptation capacity are significantly associated to each other and can influence the flood risk assessment process.

Hazard is defined as a “dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods

and services, social and economic disruption, or environmental damage”. From Geoscience Australia’s (2010) perspective, *vulnerability* is “the impact a hazard has on the people, infrastructure, and the economy”. The term *vulnerability* has been introduced to consider the extent to which people suffer from calamities which depend on the likelihood of being exposed to hazards and their capacity to withstand them, which relates to their socio-economic circumstances (Schneiderbauer and Ehrlich 2004). When talking about the number of assets such as “people, property, systems or other elements present in hazard zones that are thereby subject to potential losses”, that is the way how *exposure* is defined by UNISDR (2009). Going further specific, the term *infrastructure assets* is described as “interrelated built, institutional and environmental systems and services” (Jollands *et al.* 2006).

Looking back to Equation 3, the term *adaptation capacity* has been viewed as a system response to perturbations or stress that are sufficient to make fundamental changes in the system itself, shifting the system to a new state or how the system responds (Gallopín 2006; Preston and Stafford-Smith 2009); hence, may also be referred to as *response capacity* (Preston and Stafford-Smith 2009). And by transforming this equation, adaptation capacity can be expressed as follows (Espada *et al.* 2012):

$$\text{Adaptation Capacity (AC)} = \text{Vulnerability} - (\text{Risk} + \text{Hazard}) \quad \text{Eq. 4}$$

To operationalise Equation 4, it has been further expressed in Equations 5 and 6.

$$\text{AC} = \text{Social Vulnerability} - (\text{Risk} + \text{Flood Hazard}) \quad \text{Eq. 5}$$

$$\text{AC} = \text{Social Vulnerability} - [(\text{Fuzzy Gamma Function \{Consequential Hazards, Physical Vulnerability, and Exposure\}} + \text{Flood Hazard})] \quad \text{Eq. 6}$$

Figure 2 and Table 1 show the thematic layers/indicating variables used to analyse the components of flood risk and adaptation capacity.

4.2 Topological Cluster Analysis with Self-Organising Neural Network (SONN)

This study used 30 indicating variables: 5 for hazards, 20 for vulnerability, and 5 for exposure (Figure 2). Challenged by the selection of the most appropriate indicating variables for inclusion in the flood risk and climate adaptation capacity assessments, the Artificial Neural Network (ANN) particularly the Kohonen self-organising map (KSOM) was explored in this study. A self-organising map consists of a competitive layer that allows classification of datasets with any number of dimensions into as many classes as the layer has neurons, which are arranged in a 2D topology (The Mathworks, Inc. 2011). In this study, the SOM was operationalised with the input layer where the inputs refer to the indicating variables (e.g. flood hazard, water supply assets, etc.), neuron computation, and output layer, and a map of clustered variables as shown in Figure 3 (Mele and Crowley 2008).

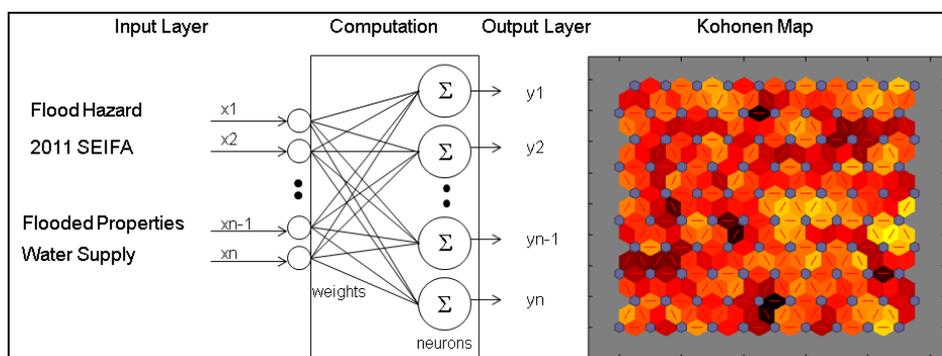


Figure 3. The conceptual self-organising neural network of the study

Processed with MATLAB version R2011b program, the indicating variables were structured to create 907266 x 5 hazard, 907266 x 20 vulnerability, and 907266 x 5 exposure matrices. Utilising the Neural Network Clustering Tool, the indicating variables were grouped or clustered by similarity through the process of classifying a 2–dimension layer of 100 neurons arranged in a 10x10 hexagonal grids. To learn the topology and distribution of indicating variables, the network was trained four times using the batch SOM algorithm with 200 epochs/iterations.

The similarity pattern of indicating variables was then analysed using the SOM planes by taking flood hazard as the basis in the pair-wise comparison. The result revealed a general pattern for two (2) variables (i.e. access to emergency services and emergency services response time) with lower weights concentrate at the centre of the SOM plane. This pattern is intuitively and visually in reverse to the general pattern showcased by flood hazard; hence these two variables were removed from further analysis.

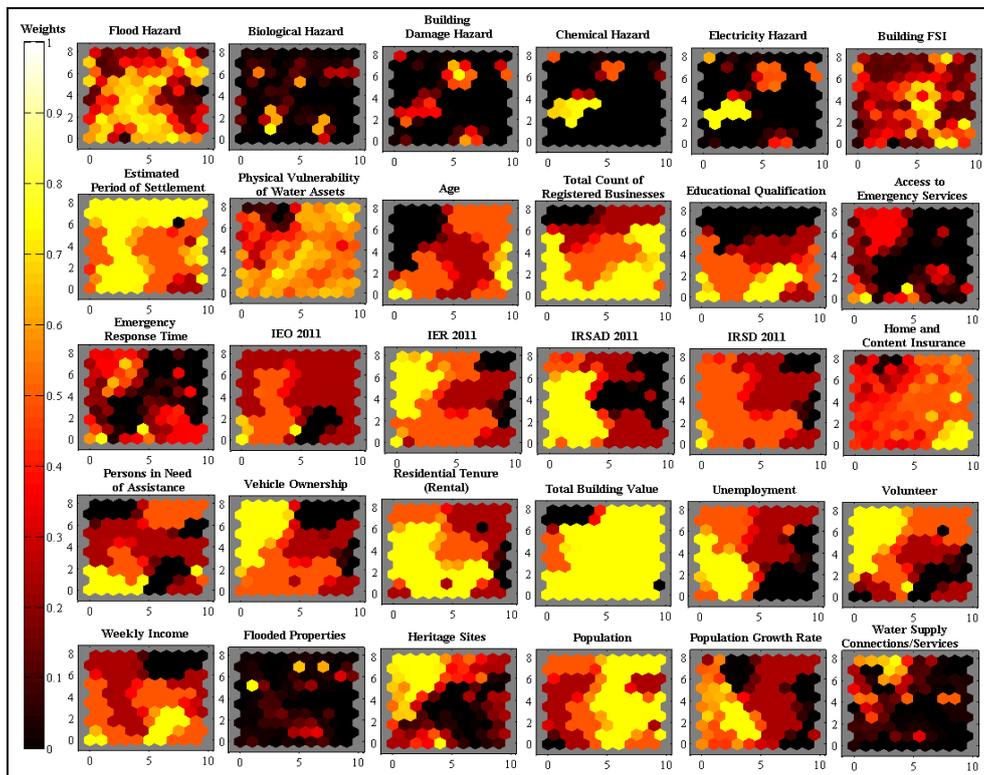


Figure 4. The SOM planes of flood risk and climate adaptation capacity indicating variables

4.3 Quantification of Flood Risk and Adaptation Capacity Metrics

From SOM analysis, the final 28 indicating variables which were selected to include in quantifying the flood risk and adaptation capacity metrics are summarised in Table 1.

The weights column from the Table indicates the unequal Bayesian joint conditional probable weight values used in aggregating the indicating variables of hazard, vulnerability, and exposure. This method of assigning weights is significant because in community vulnerability assessment, for example, people affected by floods, wetlands lost, damage cost, and adaptation cost are important dimensions to consider (Hinkel 2011), which are of unequal importance.

Using the probable weights given in Table 1, the aggregation of indicating variables for hazard, vulnerability, and exposure was performed with the weighted overlay process of Spatial Analyst Tool in ArcGIS 10. Applying Equations 1 and 6, flood risk metrics and

adaptation capacity metrics were calculated with the results as summarised in Table 2 and shown in Figure 4 (map background).

Table 1. The selected indicating variables from SOM analysis and corresponding Bayesian joint conditional probable weights

Flood Risk/ Adaptation Capacity Component	Selected Indicating Variable	Joint Conditional Probable Weight
Hazard	Biological	0.19
	Building Damage	0.19
	Chemical	0.21
	Electricity	0.19
	Flood	0.22
Social Vulnerability	Age	0.07
	Educational Qualification	0.05
	Home and Content Insurance	0.08
	IEO 2011	0.07
	IER 2011	0.06
	IRSAD 2011	0.05
	IRSD 2011	0.07
	No Vehicle	0.05
	Persons in Need of Assistance	0.06
	Residential Tenure (Rental)	0.07
	Total Building Value	0.13
	Total Count of Registered Business	0.08
	Unemployment	0.05
	Volunteer	0.05
	Weekly Income	0.06
Physical Vulnerability	Building Floor Space Index	0.30
	Period of Settlement	0.31
	Water Supply Network Assets	0.39
Exposure	2011 Flooded Properties	0.31
	2011 Population	0.16
	Heritage Sites	0.12
	Population Growth Rate	0.14
	Water Supply Connections/Services	0.27

4.3.1 Applications and Implications of Flood Risk and Adaptation Capacity Metrics to Insurance and Land-use Planning

Table 2 shows that 186 ha (8%) of the study area were exposed to very high flood risk due to the January 2011 flood event. Furthermore, 221 ha (10%) were characterised of having very low climate adaptation capacity.

Also shown in Table 2, majority of the study area (90%) revealed negative adaptation capacity metrics (-31 to <0). This significant finding would imply that vulnerability as a resource-oriented factor determines the strength or weakness of the study area; such that the generated negative values for adaptation capacity meant that the resources are not enough to increase climate resiliency of the urban community and critical infrastructures (Espada *et al.* 2012). The result also signifies that the resources of the community are outbalanced by 31 units taking zero as the break-even metric. The outcome of the analysis further indicates that the capacity of the urban community requires further deliberation as how climate adaptation is intrinsically inseparable to the physical and social vulnerability of a system. If vulnerability takes the definition in this study as the capacity of the people, community, or system to withstand flood risk, it follows then that vulnerability is inherently associated with the general economy of resources, wealth, social well-being, governance, and political will of the people and community, and the capacity to increase climate resiliency of critical infrastructure assets (Espada *et al.* 2012).

Also important to further examine are the physical and socio-economic characteristics of the study area (the remaining 10%) that indicates positive adaptation capacity metrics (>0 to 1)

(Table 2). This signifies that the resources within those areas are one unit above the zero break-even or just enough to alleviate climate risk. However, extra caution should be taken into account considering that some areas are positioned in a highly favourable physical condition (e.g. higher elevation) but the socio-economic resources inhibit the adaptation to climate risk. This finding further implies that the study area requires a range of adaptation strategies that would increase community and critical infrastructure resiliency as specified in Table 1. Adopted from Queensland Reconstruction Authority's (QRA) (2011) four phases of disaster risk reduction, the broad adaptation strategies identified in this study to increase community resiliency include mitigation, preparedness, response, and recovery.

Table 2. Summary of flood risk and adaptation capacity metrics with corresponding adaptation strategies

Flood Risk				Adaptation				
Description	Metrics	Area (ha)	%	Description	Capacity Metrics	Area (ha)	%	Strategy/Measure
Low	1 – 1.02	0.6	0.03	High	0 – 0.93	218	10	Mitigation
Moderate	1.02 – 1.21	1895	84	Moderate	-1.23 – 0	1053	46	Mitigation to Preparedness
High	1.21 – 3.52	181	8	Low	-3.24 – -1.23	771	34	Mitigation to Response
Very High	3.52-30.41	186	8	Very Low	-31.41 - -3.24	221	10	Mitigation to Recovery
Total		2263	100			2263	100	

To recap, Table 2 is the summary of a methodology identified as *flood risk-adaptation capacity index-adaptation strategies* (FRACIAS) linkage model (Espada *et al.* 2012) that allows the integration of a range of spatially explicit analytical techniques used in the flood risk assessment, quantification of adaptation capacity metrics, and identification of adaptation strategies. This model addresses the issue of integrating disaster risk reduction-climate change adaptation framework, which had been treated separately for the past years (Joshi *et al.* 2011).

The insurance and land-use planning sectors can generate a variety of significant insights from this study. For example, while risk-based premium pricing of insurance is an actuarial practice, the basis of such pricing should not heavily rely on the geographic location of risk but significantly consider the adaptation capacity of intended policy holders to pay the premiums and maintain insurability for a long-term. The government can play an important role in maintaining a private insurance market with risk-based premiums (LeBlanc and Linkin 2010) by providing financial subsidies to homeowners in areas at very high flood risk with very low adaptation capacity (e.g. low income, severe disability, significantly flooded properties, etc.). Through this approach, public-private partnership is enhanced and allows the comprehensive planning for disaster risk reduction and climate adaptation.

Whilst insurance policies offer an opportunity of transferring risk, these should not be used as a tool to encourage urban development on areas with highest risk. However, Brisbane City has the legacy of past poor land uses planning leaving homeowners in locations at high risk (van den Honert and McAneney 2011). At the time when the flood hit the region, the Queensland Development Code does not even regulate the construction of building in areas at risk of flooding (QFCI 2012); hence, amendment is recommended to consider not only the risk for flooding but also the climate adaptation capacity of the area/region. To improve the urban development in the City, the Queensland Flood Commission of Inquiry (QFCI) recommended strategies to “flood proof” the City. These include specification of flood immunity level, redesign of residential houses and commercial buildings with water resistant materials, setting minimum freeboard level, operations of “property buy-back” and “land swap” programs, and amendment of the Queensland Development Code to regulate the construction of buildings in areas at high risk to flooding.

4.3.2 Critical Water Supply Network Vulnerability Assessment

Considering that water supply problem during the January 2011 flood, which had been also experienced during the January 2013 flood, was more on water turbidity (Keller 2013 and News Limited 2013), this study examined the vulnerability of water supply by identifying the potential flow of turbid water along the trunk-reticulation mains. Using the results from the flood risk and adaptation capacity assessments in the water supply network vulnerability assessment, eight (8) out of 107 trunk-reticulation main connection points (as potential entry points of turbid water) were assessed as highly vulnerable critical water supply assets being found within areas of very high flood risk and very low adaptation capacity (Table 3).

Using the highly vulnerable critical electricity assets as flag junctions (see brown square dots in Figure 4) in the Utility Network Analysis of ArcGIS 10, the potential path of turbid water through the trunk-reticulation mains was traced and the total linear kilometer was then calculated. Results of the analysis revealed that turbid water may flow along 246 km water distribution lines in the North East and North West using the January 2011 flood event. These comprise 56% of the water pressure main within the study area may potentially affected by supply of turbid water.

Table 3. Counts of highly to very highly vulnerable critical water supply network assets

Water Supply Network Asset	Total	Highly to Very Highly Vulnerable	Percent of Total
Pressure Gauge (No.)	13	0	0
Flow Meter (No.)	61	11	18
Booster Pump (No.)	1	0	0
Control Valve (No.)	1990	268	13
Fitting (No.)	2011	205	10
System Valve (No.)	5010	636	13
Trunk-Reticulation Main Connections (No.)	107	8	7
Pressure Main (Length in Km.)	435	246	56

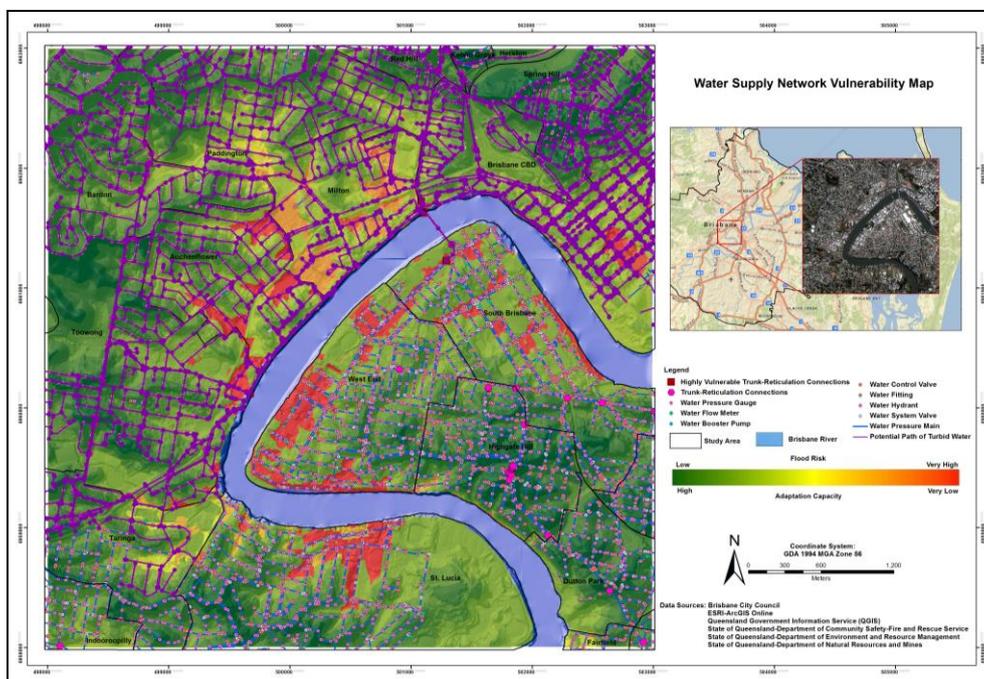


Figure 4. The generated water supply network vulnerability map of the study area

The results from these analyses can assist water supply industry to evaluate the susceptibility of water system to “dirty water” event. The analytical tool and the information generated from this study can help alleviate ranges of consequences or impacts such as

water-borne diseases from any flood event. During the January 2011 flood, no report has been made regarding any breakdown of water supply infrastructure and water shortage except for the quality of drinking water in some areas. Nonetheless, it is noteworthy to take into account the potential flood impacts that may disrupt the entire water supply system. Table 3 identified the highly and very highly vulnerable water supply network assets that can be potentially harmed in the future floods. Without the mitigation measures, the possible implications for water supply infrastructure include reduced security of supply and increased risk of fluvial flooding to water supply/treatment infrastructure (DEFRA 2011). As such, climate threats to water supply should be managed according to some lessons learned such as (The Royal Academy of Engineering 2011):

- To focus on new inter-disciplinary approaches by integrating social and economic solutions with the current engineering solutions;
- To implement distributed water systems rather than centralised water systems;
- Water recycling with conscious on energy implications of recycling water;
- Use of smart meters and intelligent pipework to reduce leakage, monitor turbid water, among others.

During the 2010/2011 floods, the supply of drinking waters was maintained to meet the demands of consumers in south-east Queensland. However, this was constrained by the suspension of water treatment operations at Mt. Crosby and North Pine dam (QFCI 2011). To improve the quality of water during flood events specifically in the South East Queensland and Brisbane areas, Keller (2013) recommended an engineering modification by adding high quality water from the Advanced Water Treatment Plants (also known as water recycling plants) directly into the water treatment plant (i.e. Mt. Crosby Plant) rather than the Wivenhoe Dam. Accordingly, the advantages of this significant change include the following (Keller 2013):

- Generating up to 50% of its usual water production directly from the recycled water;
- “Dirty” river water could have been taken in and treated with the dilution from the purified recycled water;
- Pumping energy would be substantially less by not going to the dam, the high water quality could be maintained, and it would avoid losses through evaporation and infiltration from the dam.

5. Conclusions and Recommendations

In the aftermath of the devastating 2010/2011 floods in Queensland, the Australian governments and the Queensland Reconstruction Authority (QRA) sought to plan and build stronger, more resilient communities in the future.

Linking flood risk assessment with adaptation capacity assessment was the innovative technique developed in this study. Generated from complex spatially-explicit analytical methods, the flood risk-adaptation capacity index-adaptation strategies (FRACIAS) linkage model was then discussed on how it can help to address issues on insurance and land-use planning. This includes the role of the government in the maintenance of private insurance market through the provision of financial and urban development support to areas with very high flood risk and very low adaptation capacity.

This study also examined the vulnerability of critical water supply network to climate risk and the implications if services are disrupted. Although the January 2011 flood in Brisbane did not significantly damage the water supply system, there is still need to improve the quality of water supply. Extreme weather event may cause significant disruption of water supply on

areas with very high flood risk and very low adaptation capacity. This study explored different adaptation strategies to reduce future risk both to the quality of water supply and the physical conditions of critical water supply network.

To improve this study, the following are some factors recommended to consider in the future research works:

1. Integration of hydrologic/hydraulic components and climate change factors in analysing flood hazards;
2. Vulnerability assessment of all critical water network assets (not only the trunk-reticulation connections) that might be subject to flood damages that could result in undesirable consequences; and
3. Vulnerability assessment of electricity supply, roads and rails, communication, sewerage, and storm water infrastructures.

Acknowledgments

The authors sincerely thanks the Australian Government – Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE) for the Endeavour Postgraduate Award; and Brisbane City Council, ENERGEX, Queensland Department DERM, Queensland DNRM, and QFRS for the spatial datasets used in this study.

References

- ABC News, 2011. *Flood costs tipped to top \$30b*. [Online] Available at: <http://www.abc.net.au/news/> [Accessed 24 February 2013].
- Brisbane City Council (BCC), 2011. *Be Flood Wise Fact Sheet*. Brisbane City: Brisbane City Council.
- Department for Food, Environment and Rural Affairs (DEFRA), 2011. *Climate Resilient Infrastructure: Preparing for a Changing Climate*, UK: The Stationery Office Ltd.
- Downing, T., 2002. *Concepts of Vulnerability, AIACC Project Development Workshop: Climate Change Vulnerability and Adaptation*. Trieste, Italy, Third World Academy of Sciences.
- Environmental Protection Agency (EPA), 2002. *Protect Your Water for Life: Vulnerability Assessment Fact Sheet*. [Online] Available at: www.epa.gov/ [Accessed June 20 2013].
- Espada, R., Apan, A. & McDougall, K., 2012. *Spatial modelling of adaptation strategies for urban built infrastructures exposed to flood hazards*. In: *Queensland Surveying and Spatial Conference 2012 (QSSC 2012), 13-14 Sept 2012, Brisb*. Brisbane City, Surveying and Spatial Sciences.
- Espada, R. , Apan, A. & McDougall, K., 2013. *Understanding the January 2011 Queensland flood: the role of geographic interdependency in flood risk assessment for urban community*. In: *Australian and New Zealand Disaster and Emergency Management Conference, 28-30 May 2013*, Brisbane City, AST Management Pty Ltd.
- Gallop, G., 2006. Linkages between vulnerability, resilience, and adaptive capacity. *Global Environmental Change*, Volume 16, pp. 293-303.
- Geoscience Australia, 2010. *What is vulnerability?*. [Online] Available at: <http://www.ga.gov.au/> [Accessed 05 August 2011].
- Hinkel, J., 2011. Indicators of vulnerability and adaptive capacity: Towards a clarification of the science-policy interface. *Global Environmental Change*, Volume 21, pp. 198-208.
- Hughey, E. & Bell, H., 2010. *Disaster Risk and Vulnerability*, Hawaii: Pacific Disaster Center.
- Jollands, N., Ruth, M., Bernier, C. & Golubiewski, N., 2006. The climate's long-term impact on New Zealand infrastructure (CLINZI) project - A case study of Hamilton City, New Zealand. *Journal of Environmental Management*, Volume 83, pp. 460-477.

Spatial Modelling of Flood Risk and Climate Adaptation Capacity Metrics
49th ISOCARP Congress 2013

Joshi, K., Munsif, M. & Joshi, A., 2011. Geoinformatics for Climate Change Adaptation and Disaster Risk Reduction. In: K. Joshi & T. Singh, eds. *Geoinformatics for Climate Change Studies*. New Delhi: The Energy and Resources Institute (TERI), pp. 407-439.

Keller, J., 2013. *How drought infrastructure can help us get through floods*. [Online] Available at: <https://theconversation.com> [Accessed 14 June 2013].

LeBlanc, A. & Linkin, M., 2010. New York City Panel on Climate Change 2010 Report Chapter 6: Insurance Industry. *Annals of the New York Academy of Sciences*, Volume 1196, pp. 113-126.

McDougall, K., 2012. An assessment of the contribution of volunteered geographic information during recent natural disasters. In: A. Rajabifard & D. Coleman, eds. *Spatially enabling government, industry and citizens: research and development perspectives*. Needham, MA, United States: GSDI Association Press, pp. 201-214.

Mele, P. & Crowley, D., 2008. Application of self-organizing maps for assessing soil biological quality. *Agriculture, Ecosystems and Environment*, Volume 126, pp. 139-152.

Middelmann, M., 2002. *Flood Risk in South East Queensland, Australia*. Melbourne, Institute of Engineers Australia.

Mirfenderesk, H. & Corkill, D., 2009. The need for adaptive strategic planning: Sustainable management of risk associated with climate change. *International Journal of Climate Change, Strategies and Management*, 1(2), pp. 146-159.

News Limited, 2013. *Floods caused Brisbane water shortage*. [Online] Available at: <http://www.news.com.au> [Accessed 14 June 2013].

Pederson, P., Dudenhoeffer, D., Hartlet, S. & Permann, M., 2006. *Critical Infrastructure Interdependency Modelling: A Survey of U.S. and International Research*, Idaho: Idaho Nat'l Lab.

Preston, B. & Stafford-Smith, M., 2009. *Framing Vulnerability and adaptive capacity assessment: Discussion paper*. [Online] Available at: <http://www.csiro.au/org/ClimateAdaptationFlagship.html>.

Queensland Floods Commission of Inquiry (QFCI), 2012. *Queensland Floods Commission of Inquiry Final Report*, Brisbane City: Queensland Floods Commission of Inquiry.

Queensland Floods Commission of Inquiry, 2011. *Queensland Floods Commission of Inquiry Interim Report*, Brisbane City: Queensland Floods Commission of Inquiry.

Queensland Museum, 2011. *Brisbane Flood 2011*. [Online] Available at: <http://www.southbank.qm.qld.gov.au/Events+and+Exhibitions/Exhibitions/2011/03/Brisbane+Floods+2011> [Accessed 02 February 2012].

Queensland Reconstruction Authority (QRA), 2011. *Planning for stonger, more resilient flood plains Parts 1 and 2*, Brisbane City: Queensland Reconstruction Authority.

Queensland Urban Utilities (QUU), 2011. *Submission to the Queensland Floods Commission of Inquiry*, Brisbane City: Queensland Floods Commission of Inquiry.

Schneiderbauer, S. & Ehrlich, D., 2004. *Risk, hazard and people's vulnerability to natural hazards: A review of definitions, concepts and data*, Italy: European Commission Joint Research Centre.

SEQ Water, 2012. *Somerset and Wivenhoe Dams Fact Sheet*. [Online] Available at: <http://www.seqwater.com.au> [Accessed July 2012].

Szlafsztein, C., 2008. *Adaptation to climate change and vulnerability metrics: The Index of Usefulness of Practices for Adaptation (IUPA)*. Tokyo, Institute for Global Environmental Strategies.

The Royal Academy of Engineering, 2011. *Infrastructure, Engineering and Climate Change Adaptation - ensuring services in an uncertain future*, London: The Royal Academy of Engineering.

UNISDR, 2009. *UNISDR Terminology on Disaster Risk Reduction*. Geneva, Switzerland: United Nations International Strategy for Disaster Reduction.

van den Honert, R. & McAneney, John, 2011. The 2011 Brisbane Floods: Causes, Impacts and Implications. *Water*, Volume 3, pp. 1149-1173.

The Role of Social Innovations in a Revised Urban Metabolism Concept Framed by Sustainable Development Paradigms

Peter GEZIK, Slovak University of Technology in Bratislava, Slovakia

Synopsis

This paper presents the outputs of the research focused on a revision of urban metabolism conceptual framework, and a suggestion for a new approach considering social innovations as a key component shaping and redirecting metabolic processes and determining a city's sustainability.

1. Introduction

This article is focused on the role of social innovations in a revised urban metabolism concept. Urban metabolism is a concept utilized for quantifying energy and material consumption and tracing use patterns in urban environments (Pincetl et al. 2012, p. 193). This concept emerged in the mid-sixties when Wholman (1965) compared urban processes of material, energy and water transformation to those occurring in metabolisms of living organisms. Since its first emergence, the emphasis has been mainly placed on the efficiency with which resources are used, and the theory of urban metabolism has not been widely developed (Golubiewski 2012). The vagueness of the concept and lack of studies, which could provide a comprehensive quantification of urban metabolism, (Minx et al. 2011) resulted in urban metabolism failing to become a widely applicable system-based approach. Since the last decade, many authors (Newman 2008; Minx et al. 2010; Goonetilleke et al. 2011; Pincetl 2012, Pincetl et al. 2012) continue to struggle to expand the concept, and define missing components which can transform the urban metabolism concept into a widely applicable system-based approach. In their scholarly articles they outline various urban drivers and factors which need to be considered as lifestyles (Minx et al. 2010), knowledge, information, technology, culture (Goonetilleke et al. 2011), and cultural priorities (Newman 2008). Scholars also highlight site-specific impacts on the character of urban metabolism and its correlation to locations, activities, or people (Pincetl et al. 2012). This article focuses on social innovations which utilize information, technology (Mulgan 2006), and shared knowledge via social networks, and shape cultural priorities and needs as their development and character determine characteristics of a respective community. Social innovations also characterize the lifestyle of a specific community because they are "generated by a social movement, defined as a group of actors sharing the same conditions, interests, visions, objectives or ideas, who are determined to undertake one or more actions designed to tackle some sort of social need" (Oliveira & Breda-Vázquez 2012, p. 524).

By the end of 2008, increasing urbanization achieved its magical milestone with more than a half of world's populations living in urban areas. More than ever before cities are becoming key habitats for humans and thus also placing increasing pressure on the environment, resources, and energy demands. A better understanding of the processes within the city system can reflect the interlinkages between the different drivers of urbanization, arising pressures and impacts, and can identify appropriate response measures (Minx et al., 2010). Negative impacts bounded with expanded human activities necessitates new planning approaches which may mitigate the impact and deliver sustainable development. Pincetl et al. (2012) advocate that expanded urban metabolism can address these negative impacts and outline possible pathways to sustain the quality of life for humans without permanently exhausting planetary resources or altering the planetary dynamics that support civilization.

Urban metabolism, when utilized as a system-based approach to understand urban metabolic processes and impacts, has the potential to integrate sustainable development measures into the management framework for urban development and growth. Goonetilleke et al. (2011) perceive the integration and adaptation of sustainable development into the management framework for urban growth as one of the most critical challenges facing modern urban settlements. Sustainable development paradigms also represent a framework for the research within this article.

The aim of this article is to challenge the urban metabolism concept and outline possible paths for its further extensions, which can overcome the inconsistencies in the theory and allow the concept to be utilized as a widely applicable system-based approach to understand urban metabolic processes. The key research question addressed is how social innovation determines and shapes "technical and socio-economic processes that occur in cities, resulting in growth, production of energy, and elimination of waste" (Kennedy et al. 2007, p. 44). This article is limited to a generally applicable theoretical background for further studies and experiments regarding the interplay between social innovations and material, and energy flows in urban metabolism. The methodology was based on a wide literature review utilizing comparative methods. This article is structured into five sections and a conclusion. The first section describes the current state of the urban metabolism concept, knowledge gaps, and looking closer at the ecosystem perspective. The second section familiarizes the reader with the nature of social innovations, which are exhaustively linked to the concept of urban metabolism in the third section. The fourth section relates the findings to sustainable urban metabolism and demonstrates them with numerous examples. The following discussion is summarizing the results in relation to the research objectives and discusses directions or opportunities for implementation of the findings.

2. Urban Metabolism Concept

Urban metabolism (UM) constitutes a concept addressing challenges associated with energy and material consumption in urban areas which focuses on accounting material and energy inputs and outputs into cities. Based on this concept, which emerged almost half a century ago, researchers have been struggling to develop a better understanding of energy and material flows in urban areas, and between them and the surrounding environment, with a special focus on their environmental impacts. Kennedy et al. (2007, p.44) defined UM as "the sum total of the technical and socioeconomic processes that occur in cities, resulting in growth, production of energy, and elimination of waste". Since the late twentieth century, output measures from UM analyses have been utilized for indicating urban sustainability and livability. This analysis provides a metaphorical framework within which we can examine the interactions of natural-human systems, and also provides a basis upon which to consider sustainability implications (Pincetl et al. 2012).

Despite its various possible applications UM has never been widely utilized in practice. Only a few UM studies exist, and none give more than a cursory explanation and justification of the analogy (Golubiewski 2012). There are numerous inconsistencies and unanswered questions raised by various authors. They argue (Minx et al. 2010; Golubiewski 2012; Pincetl et al. 2012) that further expansion of the concept necessitates a more interdisciplinary approach, which can better face challenges rising from such a complex system of a city. There is also a knowledge gap in understanding how site-specific issues impact sustainability measures for energy and material flows determining urban sustainability. Pincetl et al. (2012) pointed out that UM analysis necessitates matching energy and waste flows to land uses and social-demographic variables, in evaluation of the socioeconomic and policy drivers that govern the flows and patterns. There are insufficient studies explaining which components determine a distinct metabolism of a respective city, and how these specifics should be taken into account in the analytical and regulatory processes. Minx et al. (2010) pointed out that

existing studies provide very little information in terms of the amount of resources extracted or the amount of pollution generated, and how this might change aspects of environmental quality, or how this might relate to basic concepts of environmental sustainability. Insufficient attention has been paid to how changes in the metabolism modify spatial and functional structure of complex and dynamic urban areas, how to manage these changes, and what the drivers of these changes are.

2.1 Ecosystem Perspective

Some authors (Marshall 2009; Pataki 2010; Golubiewski 2012) argue that the analogies described by Wholman (1965) and his followers (Huang and Hsu 2003; Sahely et al. 2003) fail in many dimensions, arguing instead that the metabolic flows of a city should be compared to the processes in an ecosystem rather than those in an organic body. Marshall (2009) suggests that a city is a complex, dynamic, collective entity: a super-unit, made up of components that are themselves units, rather than a corporate unit composing sub-units. He emphasizes the distinction between central intelligence characterizing living organisms and collective or distributed intelligence typical for ecosystems. Whereas an organism is a single individual, an ecosystem encompasses a complex assemblage of multiple individuals located within their environment (Golubiewski 2012), who do not rigorously rely on an overall decision-making executive. Unlike organisms, a city has competing as well as cooperating components, which often behave in a self-interested and selfish way regardless of the interests of a whole (Marshall 2009). An ecosystem is not equivalent to an organism because it is not under direct genetic control (Patten and Odum 1981), and all its components, their functions and unchangeable layout are not predicted before its genesis. Rather, they emerge, develop and cease to exist during one lifetime. Ecosystems are understood as complex systems which are continuously evolving and changing, though this change is at times either slow and gradual, or large and rapid (Biggs et al. 2010). Ecological succession does not operate unidirectionally toward a predetermined climax community and thus the ecosystem does not have a predetermined structure or morphology (Golubiewski 2012). Therefore, Biggs et al. (2010) suggest shifting the focus of ecosystem management away from attempting to maintain ecosystems in some fixed optimal state and instead focusing on guiding ecological change along desirable trajectories.

Buildings, people or infrastructure are components of a more comprehensive system tied together by tangible and intangible bonds (Marshall 2009). Positioning in the city determines the performance of each component and its further development or decline, depending on the mutual interaction between a component and the superior system. A distinguishing feature of complex systems is that they are defined more by the interactions among their constituent parts than by the parts themselves (Biggs et al. 2010). Compared to a city, urban components interact via metabolic flows of energy, materials producing various technical and socio-economic processes represented by UM. Character and extent of these processes determine the transformative change of an urban component. The existence of these processes depends not only on the presence of energy or materials in the system, but on the inclusion of innovations, another element which can impact character, extent and direction. Innovations form the development of an urban component, and their presence and attributes determine the extent and character of needs for certain material and energy flows. Compared to an ecosystem, Biggs et al. (2010) also suggest a social-innovation framework for the analysis of transformative change in ecosystem management because it not only describes processes of change, but also emphasizes the factors and leverage points that may foster their emergence.

3. Nature of Social Innovations

Innovation is a concept studied in many disciplinary contexts, leading to a multiplicity of definitions, including psychological, sociological, and economic ones (Wineman et al. 2009). Innovation differs from invention in that it does not only refer to the creation of new ideas or products, but also to the processes of diffusion or adoption that make promising ideas useful in meeting social needs (Biggs et al. 2010). Social innovation refers to innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly diffused through organizations whose primary purposes are social (Mulgan 2006). They mean the application of creativity to social purposes (Moulaert and Nussbaumer 2005; Mulgan 2006, Oliveira & Breda-Vázquez 2012), introducing changes in a social landscape (Moulaert et al. 2005). Innovations have to cross the chasm as they pass from being promising pilot ideas to becoming mainstream products or services (Mulgan 2006). "Every successful social innovator or movement has succeeded because it has planted the seeds of an idea into many minds" (Mulgan 2006, p. 149).

Social innovations are not easily replicable; it may take decades to create the environmental conditions for growth, and the organizational challenges are no less severe (Mulgan 2006). Places and spaces are highly relevant for the emergence and thriving of social innovations because they are simultaneously dependent on both path and context. (Oliveira & Breda-Vázquez 2012). These dependencies stem from the nature of urban system from which they emerge, as each system has its own specificities, including the mix of resource use and social organization, governance and position in larger systems (Pincetl et al. 2012), quality of communications (Keller 2008), system scale and diversity of actors (Drewe et al. 2008). These factors may contribute decisively, while diversity of actors is considered a key factor in sustaining social innovations and promoting their diffusion across different territories, policy sectors and segments of society (Oliveira & Breda-Vázquez 2012).

4. The role of social innovations in urban metabolism

There is an assumption that different cities have different metabolic processes even though they may use approximately the same amounts of energy and materials because they depend largely on site-specific conditions (Minx et al. 2010; Pincetl et al. 2012). In the last decade many authors (Gandy 2004; Kennedy et al. 2007, Newman, 2008; Minx et al. 2010; Goonetilleke et al. 2011; Pincetl et al. 2012; Pincetl 2012) are searching for factors and drivers which are responsible for these variations. Kennedy et al. (2007) claim that the metabolism of cities should be analyzed in terms of four fundamental flows or cycles (water, materials, energy, and nutrients) and differences in the cycles may be expected between cities due to age, stage of development (i.e., available technologies), and cultural factors. Minx et al. (2010) found that metabolic flows are equally shaped by drivers such as land-use planning and infrastructure decisions or the economic role of the city under consideration as well as the lifestyles of its residents. Goonetilleke et al. (2011) define intangible inputs as knowledge, information, technology, values and culture, which are included within the integrated UM framework. Pincetl et al. (2012) suggest that UM analysis, to be effective, also requires consideration of variables such as demography, economy, health, mobility/accessibility, equity, community quality, policies and regulations, employment, and education. Furthermore they pointed out that interdisciplinary collaboration is necessary for matching energy and waste flows to land uses and social-demographic variables, in evaluation of the socioeconomic and policy drivers that govern the flows and patterns.

In this article it is suggested that examination of amount, generation, and character of social innovation also play an important role in expanding the UM concept. The aforementioned conditions for growth and development of social innovations share many common features with the factors and drivers expanding the UM concept as characterized by UM researchers.

They are both context-dependent and interplay in the socio-cultural development dimension. The character and rate of generation and implementation of social innovations shape such factors as lifestyle, stage of development, demography, economy, mobility, accessibility, values and culture.

For example, the growth of metabolic flows is due to the increase in urban population, but even more to the rising per capita demand of citizens for floor space, goods, leisure activities, etc. (Kennedy et al. 2007). It was proven that a reduction in household size and dwelling occupancy are a more important driver of CO₂ emissions than population growth (Minx et al. 2010). Drivers for new needs in terms of, for example, floor space, goods or leisure activities are closely tied to new possibilities (Mulgan 2006) arranged by innovations. Social innovations are introducing changes in a social landscape which are becoming mainstream, gradually forming urban lifestyles.

Much of what we now take for granted in social life began as radical innovation. A century ago, few believed that ordinary people could be trusted to drive cars at high speed, the idea of a national health service freely available was seen as absurdly utopian, the concept of "kindergarten" was still considered revolutionary, and only one country had given women the vote. Yet in the interim, these and many other social innovations have progressed from the margins to the mainstream (Mulgan 2006, p. 145).

In the western world, the ideas of individualism boosted new activities which were introduced and disseminated via social innovations. They shifted the traditional values of family life to those of self-reliance, self-presentation, and self-realization with tremendous effects on urban metabolic flows. Large family households gradually became obsolete and people began investing their time and effort into securing their self-reliance rather than raising many children. This transformation brought changes in terms of demography, represented by the decreased fertility rate and also affected city growth in the expansion of the areas needed for housing development. The implementation of social innovations such as kindergarten, work-free Saturdays, or various technological innovations like the electric washing machine, dish washer, and stove supplied even more time for self-presentation, and self-realization. New activities and opportunities now appeared, and were reflected by changes and creations of new metabolic flows. The use of airplanes for summer holidays, or self-organized weekend trips using a passenger car became standard for most western households. Inventions such as the World Wide Web, cell phones or internet shopping do not cause recognizable change in organizations of urban metabolic flows until they undergo the processes of diffusion and adoption involving the masses and thus become innovations. In the field of communication and transport, innovations are broadly extending accessibility of various materials, nutrients and energies, causing modern cities to no longer rely on their hinterlands; rather, they participate in continental and global trading networks (Kennedy et al. 2007).

In very early stages of the process of innovation, the presence of creative people is necessary because they come up with new ideas that can possibly become innovations (Mulgan 2006, Oliveira & Breda-Vázquez 2012). These people, including artists, writers, scientists, entertainers, actors, and designers, make up the core of the 'creative class' and they tend to cluster in certain places, not only for economic but also for lifestyle reasons (Oliveira & Breda-Vázquez 2012). They seem to be attracted to locations that offer diversity, authenticity, tolerance and inclusiveness, the so-called 'soft location factors' (ibid.). Compared to business innovation models in which bigger organizations have more 'absorptive capacity' to learn and evolve innovations, (Mulgan 2006) large cities are also often found to be the places which give birth to massive social changes. They can provide a pooled market for knowledge workers, more efficient suppliers to the industry (Teirlinck and Spithoven 2008) and also attract the creative class due to their soft location factors. The generated social changes are gradually transferred from the city of origin not only to similar cities which keep active exchanges of human capital, knowledge, and innovations, but also

between the city and its hinterland. This transfer can be observed in the example of backyard farming fading as the result of lifestyle change and eased accessibility of imported food. Initially it vanished from the urban outskirts and continued further to the hinterlands which were increasingly colonized by urban population spreading social innovation originally evolved in urban areas. This social innovation transfer significantly transformed nutritive metabolic flows, not only of the hinterland itself, but also of the city depending on it.

5. Sustainable urban metabolism

Urban metabolism provides a metaphorical framework to examine the interactions of natural-human systems and provides a basis upon which to consider sustainability implications (Pincetl et al. 2012).

The decision to concentrate on materials is based on the fact that there are reliable metrics for the assessment of urban material flows and stocks and that materials and substances are crucial for the sustainability of a city in terms of functioning resource availability, and environmental protection (Kennedy et al. 2007, p. 11).

Since the late 1980s 'sustainable development' and 'sustainability' have gradually become a main objective of the majority urban planning frameworks even though the concept of sustainable development and sustainability itself is still vague and undefined (Goonetilleke et al. 2011). Additionally, UM researchers have not achieved a stabilized consensus on what measures and characteristics represent its sustainable state. Nevertheless, the current set of practices defined by sustainable development research still represents the most reliable framework for UM. Minx et al. (2010) highlighted that the standard UM concept only provides information on environmental pressures in terms of the amount of resources extracted or the amount of pollution generated, but on the other hand it provides little information in terms of how this might change aspects of environmental quality or how this might relate to basic concepts of environmental sustainability. Pincetl et al. (2012) suggest that the sustainable city implies an urban region for which the inflows of materials and energy and the disposal of wastes do not exceed the capacity of its hinterlands. Newman (1999) stated that the best way to ensure that there are reductions in impact is to reduce the resource inputs. Kennedy et al. (2007) further pointed out that understanding the changes to storage processes—water in urban aquifers, heat stored in urban canopy layers, toxic materials in the building stock, and nutrients within urban waste dumps in some cities- may be as important as reducing the sheer magnitudes of inputs and outputs.

Resource depletion and energy deficiency are shifting the focus on other components of urban metabolism which can partially subsidize material and energy flows. This article suggests that innovations and their management have the ability to transform or redirect material, energy and nutritive urban metabolic flows. Minx et al. (2010) presented how three different approaches to content urban energy demands can impact the quality of the environment and thus determine urban sustainability.

For example, to meet increased urban energy demands, a city can build a new power plant increasing local air pollution. This might have detrimental health effects for at least some of the urban population and therefore diminish quality of life in the city. Alternatively, it can import the additional energy from elsewhere. In this case, whilst the metabolism of the city grows, urban quality would not be affected in the city of consideration (but potentially elsewhere). However, the global environmental effects could potentially be negative (even though not necessarily). A third alternative could be the replacement of an old, small inefficient power plant with a new, bigger and highly efficient one on the city's

territory, which provides more usable energy with a smaller pollution output. In this case depending on the degree of efficiency improvements and the level of additional energy demands, the metabolic change could even decrease local air pollution and improve urban quality.

In these three examples it can be easily observable how technological innovation offers the most environmentally friendly solution. Many more examples can be found where innovations shape, redirect or bring to the end various urban metabolic flows. Social innovations like community wind farms or zero-carbon housing developments are bringing considerable changes to the environmental impacts of per capita energy demands. Consideration of social innovation character and rate of generation can increase the accuracy of UM analysis and also outline sharper contours of its further development.

Goonetilleke et al. (2011) argues that waste should be viewed as a resource, to be used 'fit for purpose' rather than to be disposed as expeditiously as possible. Today's stock is tomorrow's waste, and can serve as a future resource because of the time gap between input and output: in a growing economy, the future amount of wastes will be much larger than today's (Brunner 2007). Ecological friendly innovation like recycling can turn the state of UM from a linear one to a more circular one in which resources are utilized multiple times and thus lower inputs are needed. Social innovation stimulation and promotion can be crucial, as the social change produced depends on how many people are being persuaded to abandon old habits (Mulgan 2006). Reduced dependency on external supplies of resources would increase the stability, diversity and resilience of the urban ecosystem (Golubiewski 2012).

6. Discussion

The aim of this article was to outline possible paths for further extensions of the concept of urban metabolism, which can overcome the inconsistencies in the theory and describe how social innovation determines and shapes technical and socio-economic processes that occur in cities. The research aiming to answer the key research question was limited to a generally applicable theoretical background for further studies and experiments regarding social innovations in UM.

To our knowledge, it is the first study that examines the role of social innovations in the UM concept. This article critically assessed the current state of the matter and outlined new approaches which expand the concept, and defined missing components which can possibly transform the UM concept into a widely applicable system-based approach. Better understanding of the processes in UM can reflect the interlinkages between the different drivers of urbanization, arising pressures and impacts, and identify appropriate response measures (Minx et al. 2010). Expanded UM has the potential to integrate sustainable development measures into the management framework for urban development and growth.

Social innovation determines and shapes technical and socio-economic processes that occur in cities because they form the development of an urban component, and their presence and attributes determine the extent and character of needs for certain material and energy flows. The character, and rate of generation and implementation of social innovations shape factors such as lifestyle, stage of development, demography, economy, mobility, accessibility, values and culture which were previously found to have an impact on UM. Social innovations significantly transform metabolic flows not only of the city of their origin, but also metabolic flows of its hinterland and similar cities with which it maintains an active exchange of human capital, innovation and knowledge. Innovations and their management have the ability to transform or redirect material, energy and nutritive urban metabolic flows and bring considerable changes in environmental impacts. They can turn the state of UM from a linear

one to a more circular one in which resources are utilized multiple times and thus lower inputs are needed.

Integration and implementation of the UM concept into planning institutional framework is perceived as a conditioning prerequisite for the utilization of its ideas in practice. Such a framework should provide a platform whereby different disciplines can appreciate, absorb and learn from other areas, and should have the flexibility to adapt to a range of dynamic scenarios of defined elements in the expanded UM framework (Goonetilleke et al. 2011). It should secure a balance between complementary and contradictory social, economic and environmental goals via negotiation, compromise and integration of technical designed oriented knowledge (ibid.).

Territorially rooted institutional context made up of formal and informal rules, values and practices is extremely hard to reproduce, but plays a crucial role in respect to social innovation adaptation and diffusion (Oliveira & Breda-Vázquez 2012). Organizations and government institutions should take the managerial role over the processes, and provide appropriate supporting mechanisms as some social innovations may fit better with diverse contexts than others (ibid.). On the other hand, regulating mechanisms are also necessary because not all social innovations in any extent support suitable UM. The supporting mechanisms have to be focused on creating an appropriate environment securing emergence of innovations, because social innovation cannot be directly planned and produced; it can only be stimulated by creating an environment conducive to the emergence of innovation (Biggs et al. 2010). The environment has to provide networks where apparently unrelated methods and ideas can be used together (Mulgan 2006).

7. Conclusion

Innovations need to be interpreted as new dimensions in the urban metabolism concept. Constantly accelerating innovations determine the orientation and also the existence of most urban processes, representing the key elements steering urban development and sustainability. Better understanding of the development tendencies and interdependences between material, energy, nutritive, and innovation flows can deliver a more comprehensive assessment of viability and efficiency of respective planned managerial interventions. The responses of various urban agents anchored in a city's institutional framework to innovations, in the context of socio-cultural specifics, co-determine urban metabolism processes. Further research will be needed to examine the tasks of urban metabolism management and to develop a consistent methodology utilizing the findings presented in this article.

References:

- Biggs, Reinette; Westley, Frances; and Carpenter, Stephen (2010) "Navigating the Back Loop: Fostering Social Innovation and Transformation in Ecosystem Management", *Ecology and Society*, Vol. 15, No. 2
- Brunner, Paul (2007) "Reshaping Urban Metabolism", *Journal of Industrial Ecology*, Vol. 11, No. 2 (Fall)
- Drewe, Paul; Klein, Juan-Luis; Hulsbergen Edward (eds.) (2008) *The challenge of social innovation in urban revitalization*, Techne Press, Amsterdam.
- Gandy, Matthew (2004) "Rethinking urban metabolism: Water, space and the modern city", *City* Vol. 8, No. 3, (December)
- Golubiewski, Nancy (2012) "Is There a Metabolism of an Urban Ecosystem? An Ecological Critique", *AMBIO*, Vol. 41 No. 7 (November)
- Goonetilleke, Ashantha; Yigitcanlar, Tan; and Lee, Shinyi (2011) Sustainability and urban settlements: urban metabolism as a framework for achieving sustainable development. *Summit Proceedings of the 4th Knowledge Cities World Summit* pp. 152-158., Bento

- Goncalves Publisher: The World Capital Institute and Ibero-American Community for Knowledge Systems
- Huang, Shu-Li; and Hsu, Wan-Lin (2003) "Materials flow analysis and emergy evaluation of Taipei's urban construction", *Landscape and Urban Planning* Vol. 63 No. 2 (April)
- Kennedy, Christopher; Cuddihy, John; and Engel-Yan, Joshua (2007) "The changing metabolism of cities", *Journal of Industrial Ecology*, Vol. 11, No. 2 (April)
- Minx, Jan; Creutzig, Felix; Medinger, Verena; Ziegler, Tina; Owen, Anne; and Baiocchi Giovanni (2011) Developing a pragmatic approach to assess urban metabolism in Europe. A report to the European Environmental Agency. Climatecon Working Paper Series No. 1-2011, Stockholm Publisher: Stockholm Environment Institute
- Marshall, Stephen (2009) *Cities Design and Evolution*, Abingdon Publisher: Routledge
- Moulaert, Frank; and Nussbaumer, Jacques (2005) "The social region. Beyond the territorial dynamics of the learning economy", *European Urban and Regional Studies* Vol. 12 No. 1 (January)
- Moulaert, Frank; Martinelli, Flavia; Swyngedouw, Erik; and González, Sara (2005) "Towards alternative model(s) of local innovation", *Urban Studies* Vol. 42 No. 11 (October)
- Mulgan, Geoff (2006) *The Process of Social Innovation*, *Innovations: Technology, Governance, Globalization*, Vol. 1 No. 2 (Spring)
- Mulgan, Geoff; Tucker, Simon; Ali, Rushanara; and Sanders, Ben (2007) *Social innovation. What it is, why it matters and how it can be accelerated*, London Publisher: The Young Foundation
- Newman, Peter; Birrell, Bob; Holmes, Doug; Mathers, Colin; Newton, Peter; Oakley, Graeme, O'Connor, Alice; Walker, Bruce; Spessa Allan; Tait David (1996) *In Department of Sport and Territories, Human settlements in Australia: State of the environment*, Melbourne, Publisher: CSIRO Publishing
- Newman, Peter (1999) "Sustainability and cities: Extending the metabolism model", *Landscape and Urban Planning*, Vol. 44 No. 4 (September)
- Newman, Peter (2008) *Transitions: Pathways to sustainable urban development in Australia*, Melbourne Publisher: CSIRO Publishing
- Oliveira, Carlos; and Breda-Vázquez, Isabel (2012) "Creativity and Social Innovation: What Can Urban Policies Learn from Sectoral Experiences?", *International Journal of Urban and Regional Research*, Vol. 36 No. 3 (May)
- Pincetl, Stephanie; Bunje, Paul; Holmes, Tisha (2012) "An expanded urban metabolism method: Toward a systems approach for assessing urban energy processes and causes", *Landscape and Urban Planning*, Vol. 107 No. 3 (September)
- Pataki, Diane (2010) *Integrating ecosystem services into the urban metabolism framework*, Sacramento Publisher: PIER Program of the California Energy Commission
- Patten, Bernard; and Odum, Eugene (1981) "The cybernetic nature of ecosystems", *The American Naturalist* Vol. 118 No. 6 (December)
- Pincetl, Stephanie (2012) "Nature, urban development and sustainability – What new elements are needed for a more comprehensive understanding?", *Cities*, Vol. 29 No. 2 (December)
- Sahely, Halla; Dudding, Shauna; and Kennedy, Christopher (2003) "Estimating the urban metabolism of Canadian cities: Greater Toronto Area case study", *Canadian Journal of Civil Engineering* Vol. 30 No. 2 (April)
- Teirlinck, Peter; and Spithoven, Andre (2008) "The Spatial Organization of Innovation: Open Innovation, External Knowledge Relations and Urban Structure", *Regional Studies*, Vol. 42 No.5 (June)
- Wineman, Jean; Kabo, Felichism; and Davis, Gerald (2009) "Spatial and Social Networks in Organizational Innovation", *Environment and Behavior*, Vol. 41 No. 3 (May)
- Wolman, Abel (1965) "The metabolism of cities", *Scientific American*, Vol. 213 No. 3 (September)
- Zimmerer, K. S. (2006). *Globalization and new geographies of conservation*. Chicago: University of Chicago Press.

Interrelation Between Micro-Blog Hotspots And Urban Spatial Network: An Empirical Analysis Of Tongji-Rim Intellectual-Economic-Zone, Shanghai, Based On Sina Weibo

Jing HAN, Lingyu KONG, Tongji University, China

Abstract

In the society with highly developed information technology, interaction of virtual world and physical space has become a hot topic for urban planners and architects. This paper tries to explore the mutual relation between information technology and physical space from a micro perspective of a small-scale urban area. We take the intellectual-economic-zone around Tongji University as target area. We propose a three-step methodology. First, we collect all the micro-blogs published on the Sina platform within Tongji-Rim during a week and create the hotspots density graph (heat map). Second, by Urban Network Analysis (UNA) toolbox of ArcGIS, we measure the five spatial network centrality indices of Tongji-Rim. Third, we overlay the heat map on the UNA graphs and compare the similarity. The outcome shows that there obviously exists interrelation between social network and urban spatial network. The order of the five indices' explanatory power for micro-blog heat map is: Reach, Straightness, Betweenness, Closeness and Gravity. Higher reach and straightness lead to more opportunities of arriving and micro-blogging. Betweenness represents necessity of passing by but not staying or more worthy news. The weak explanation of Closeness is the evidence that, although the virtual social network must be based on real individuals and space, information technology has already broken the geographic barriers. Location and distance are not the most significant factors for urban development.

1. Introduction

Information technology has been making dramatic impacts on the traditional space geography. It changed the way people understanding place and time, and built a new form of organization of space and objects in it. Many scholars have studied this variation from different aspects. Manuel Castells (1996) distinguished space of flow and space of place. He argued that the space of flow consists of the technical infrastructure network, the node and hub network, the dominant elite network and websites. This thought provided an important theoretical frame for physical and virtual space research.

After the traditional one-to-many and one-to-one media, the emergence of social networking services has brought human society into to a new many-to-many media era. Among various social networking services, micro-blogging has noticeably revolutionized the way information is consumed. Just as Nagarajan et al. (2009) pointed out, micro-blog has empowered citizens themselves to act as sensors or sources of information that could lead to consequences and influence, or even cause media coverage.

What's more, according to Liu Yang (2010) and Zhan Zihua (2011), by the end of June, 2011, the total number of netizens in China has amounted to 485 million and Internet penetration rate has reached 36.2%. The number of micro-blog users has increased to 195 million, while netizen utilization rate has been expanded to 40.2% from 13.8%. From the world's first micro-blog, Twitter, to Sina Micro-blog and Tencent Micro-blog in China, micro-blog has gradually become the fastest-growing Internet application and an influential social media.

Thousands of billions of micro-blogs are generated every day from all over the world, which makes micro-blog not only a platform for developing interpersonal relationship, but also a valuable huge database for studies. In this context, many experts mined the big data from different dimensions like space, time, theme, sentiment, impact, network structure, spreading mechanism etc. As for urban researchers and planners, does virtual factor have any relation with the physical space, what kind of interrelation is between them, and how do they interact with each other, are the questions they concerned most. To understand this, foreign scholars graphed and animated the heat map of Twitter. They proved that Twitter users can be considered as sensors that react to spatial static events or moving patterns (Sakaki *et al.* 2010), and it is possible to reliably detect relevant spatial changes (Eduardo Ruiz and Vagelis Hristidis 2013). Domestic scholars Zhen Feng *et al.* (2013) analyzed China's city network characteristics on Sina Micro-blog. The result shows a clear hierarchical structure and level distinction which are consistent with the real ones. They believed that the spatial "flow" and "viscosity" brought by this powerful new media will have a positive impact on urban systems.

Above all, scholars both at home and abroad have answered the questions from a national and regional macro view. But researches on the urban micro level are really rare. As a result, based on the previous theories and related works, this paper tries to explore the interrelation between micro-blog hotspots and urban spatial network from a relatively microscopic perspective of small-scale urban area. We take China's most popular social networking service site Sina Weibo as platform, and the intellectual-economic-zone around Tongji University as target area.

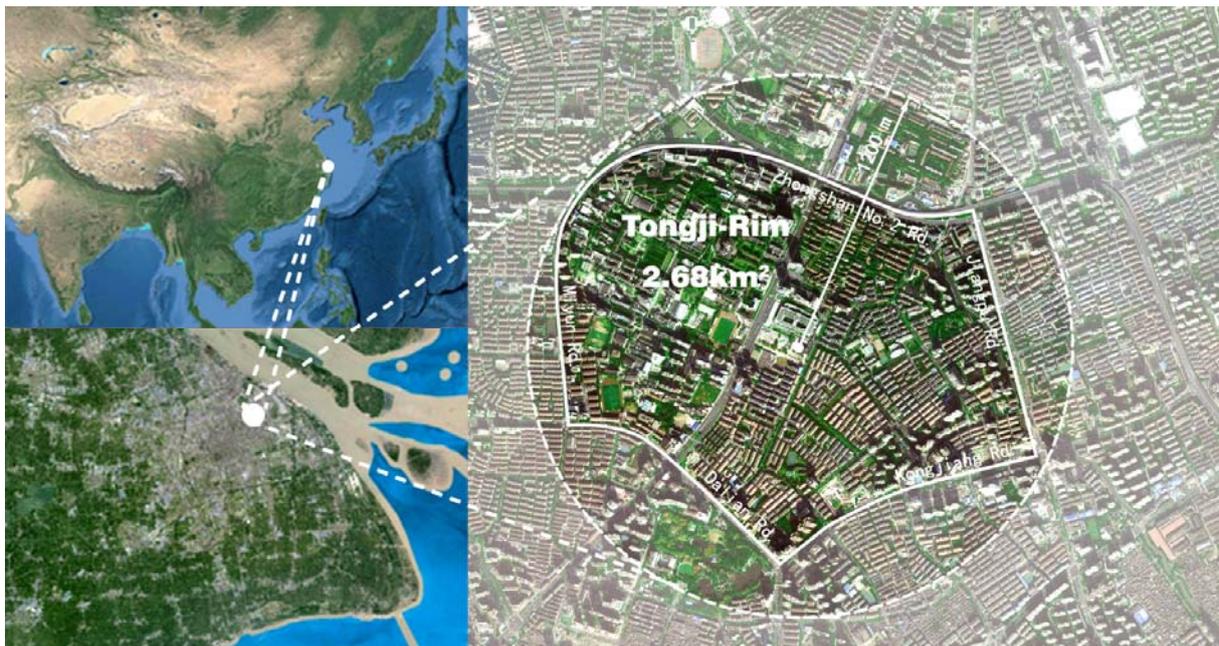


Figure 1: The location of Tongji-Rim Intellectual-Economic-Zone
Source: Author's self-drawn

The Tongji-Rim Intellectual-Economic-Zone (Figure 1) is currently China's largest design industrial cluster. Located in Yangpu District, Shanghai, reaching North Zhongshan No.2 Road on the north, Jiangpu Road on the east, Dalian Road and Kongjiang Road on the south, Miyun Road on the west, it occupies an area of 2.68 square kilometers. It mainly homes architectural design studios and urban planning offices, and is supplemented by various types of knowledge-based service enterprises such as education and training, landscape

design, art and media design, environmental engineering design, automobile design, software design and engineering consulting. There are tens of thousands of high-quality talents, who are the majority users of micro-blog, making it an ideal area to study the interrelation between micro-blog and urban spatial network.

This paper is organized as follows: After introducing the background and related studies in this section, we construct an innovative research methodology in Section 2. Section 3 presents the detailed research process in which a weekly micro-blog heat map of target area is drawn, a series of spatial traits are tested and the comparison of their similarity is made. Section 4 gives the ranking results of the spatial traits' explanatory power for micro-blog hotspots distribution and respectively analyzes the reasons. We discuss the meaning of results and conclude the paper in Section 5.

2. Methodology

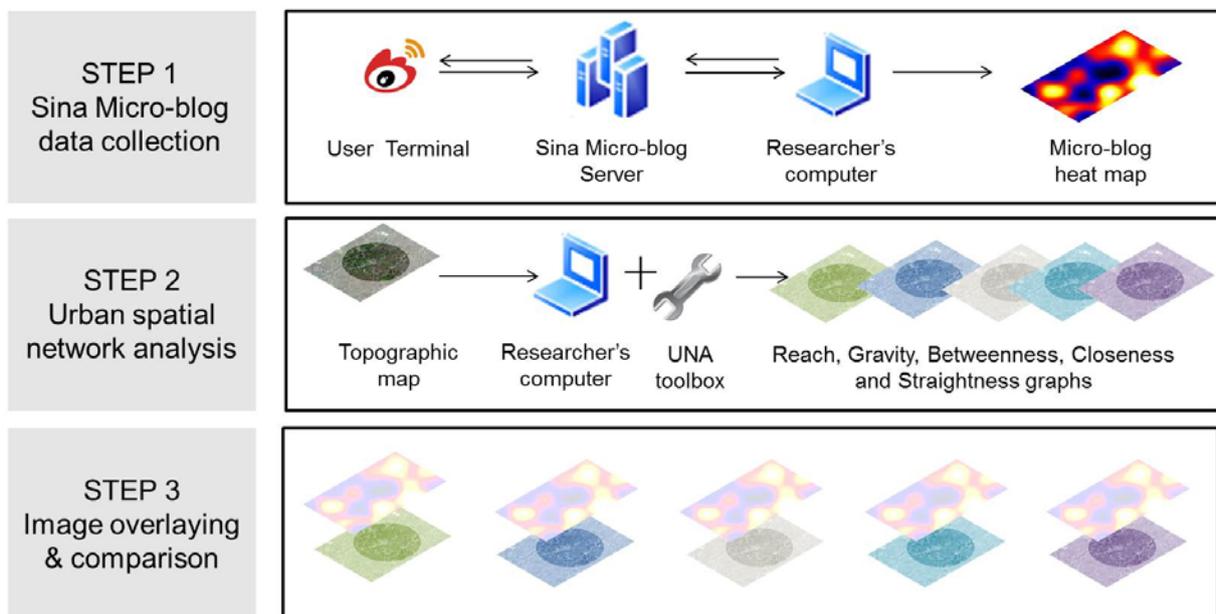


Figure 2: Framework of the research
Source: Author's self-drawn

This paper proposes a three-step methodology (Figure 2). The first step is data collection and visualization. We collect all the micro-blogs published on the Sina Weibo micro-blogging platform within Tongji-Rim for a certain period (a week). Then we extract time and geographic location information from every micro-blog posts, and organize them into a table. To create the hotspots density graph/heat map, we import the table into ArcGIS, and show it in a time-split way.

The second step is urban spatial network analysis. With the open-source software plug-in extension, Urban Network Analysis (UNA) toolbox for ArcGIS (developed by City Form Lab at the Singapore University of Technology & Design in collaboration with the School of Architecture & Planning at MIT), we compute five types of network centrality measures on spatial networks in the target area: Reach, Gravity, Betweenness, Closeness and Straightness. This toolkit applies to small-scale and detailed networks of dense urban areas, like Tongji-Rim.

The third step is image overlaying and comparison. We overlay the spatial network analysis results, Reach, Gravity, Betweenness, Closeness and Straightness images, respectively on the micro-blog heat map, to match the distribution of the micro-blog hotspots, and find out the spatial traits which best explain the visualized Sina Weibo data.

3. Research Process

3.1 Micro-Blog Data Collection

Sina Weibo Open Platform provides Application Program Interface (API) for developers. We choose "place/nearby_timeline" port to capture the dynamic information surrounding a particular location. To cover the whole Tongji-Rim area, we draw a circle with 1200-meter-radius and centered in the point of Shanghai No.1 International Design Square, whose specific latitude and longitude coordinates are 31°16'53.50" N, 121°30'10.21" E. The time range is the latest 7 days, from Jun 23 00:00:00 +0800 2013 to Jun 30 00:00:00 +0800 2013. By running the self-designed code, all the micro-blog containing users' personal information and post content are read one by one and output in the text form.

The statistical result shows that 6211 Sina micro-blogs were published altogether in the past 7 days around Tongji-Rim, 887 posts on average a day and 74 posts every two hours (Table 1). Every day there were two peaks, from 10:00 to 14:00 and 16:00 to 22:00, and two valleys, from 14:00 to 16:00 and 2:00 to 6:00 (Figure 3).

	Jun23	Jun24	Jun25	Jun26	Jun27	Jun28	Jun29	Total	Aver
00:00-02:00	63	54	54	54	67	45	52	389	56
02:00-04:00	16	13	17	18	27	22	31	144	21
04:00-06:00	14	7	19	13	19	10	12	94	13
06:00-08:00	38	39	51	37	38	43	24	270	39
08:00-10:00	70	79	194	85	58	85	90	661	94
10:00-12:00	106	98	108	80	72	87	106	657	94
12:00-14:00	119	83	125	75	100	92	115	709	101
14:00-16:00	92	65	103	78	75	108	122	643	92
16:00-18:00	117	68	112	95	87	73	87	639	91
18:00-20:00	100	77	133	107	95	95	95	702	100
20:00-22:00	104	95	66	102	99	103	92	661	94
22:00-24:00	92	96	94	101	87	75	97	642	92
Total	931	774	1076	845	824	838	921	6211	887
Aver	78	65	90	70	69	70	77	887	74

Table 1: The number of Sina Micro-Blogs around Tongji-Rim in every 2 hours of 7 days
Source: Sina Weibo Open Platform and the author's own study

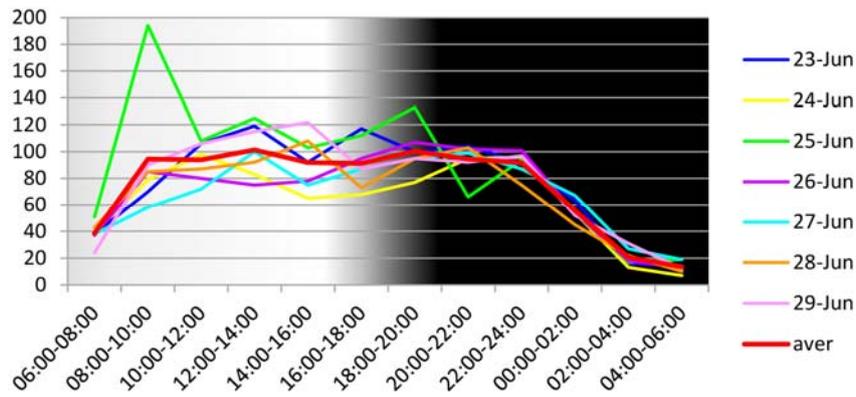


Figure 3: The line chart of Sina Micro-Blogs around Tongji-Rim in every 2 hours of 7 days
Source: Sina Weibo Open Platform and the author’s own study

Table 1 and Figure 3 only tell the distribution characteristics of micro-blog publication from date and time dimension. To make comparative study with real space, what is more important is to find out the exact places where micro-bloggers release every post, then we can analyze the relevancy. Therefore, we import the processed data into ArcGIS, align the coordinate system, and achieve the spatial-temporal graphs.

The left side of Figure 4 is the scatter plot of all 7 days. Each red spot corresponds to one micro-blog. The transformed heat map, which reflects the density of micro-blogs, lays on the right side. (The transformation method is to enumerate the dots in a circle with given radius. Here we use 100-meter radius for best image effect.) From it, 2 red super hotspots in the northwest and southeast can clearly be seen. Their real addresses are the Music Square near the College Students’ Activity Center of Tongji University, and the commercial area around Xinhua Hospital, respectively. On the periphery of them, as well as at the intersection of two thoroughfares (in the southwest corner) -- Dalian Road and Siping Road, there are some yellow secondary hotspots forming a triangle structure. Along the sides the heat falls off gradually with distance, and in the center very few micro-blogs are produced. Figure 5 illustrates the initial daily scatter plots from Jun 23 to 29, 2013.

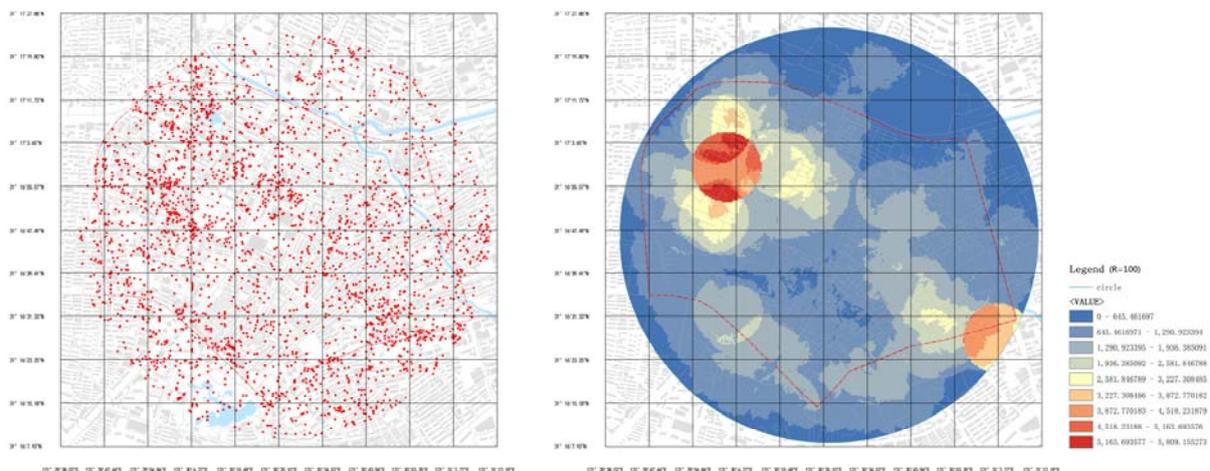


Figure 4: Left: Scatter plot of Sina micro-blog in all 7 Days
Right: Heat Map of Sina micro-blog in all 7 Days with 100-meter radius
Source: Author’s self-drawn in ArcGIS environment

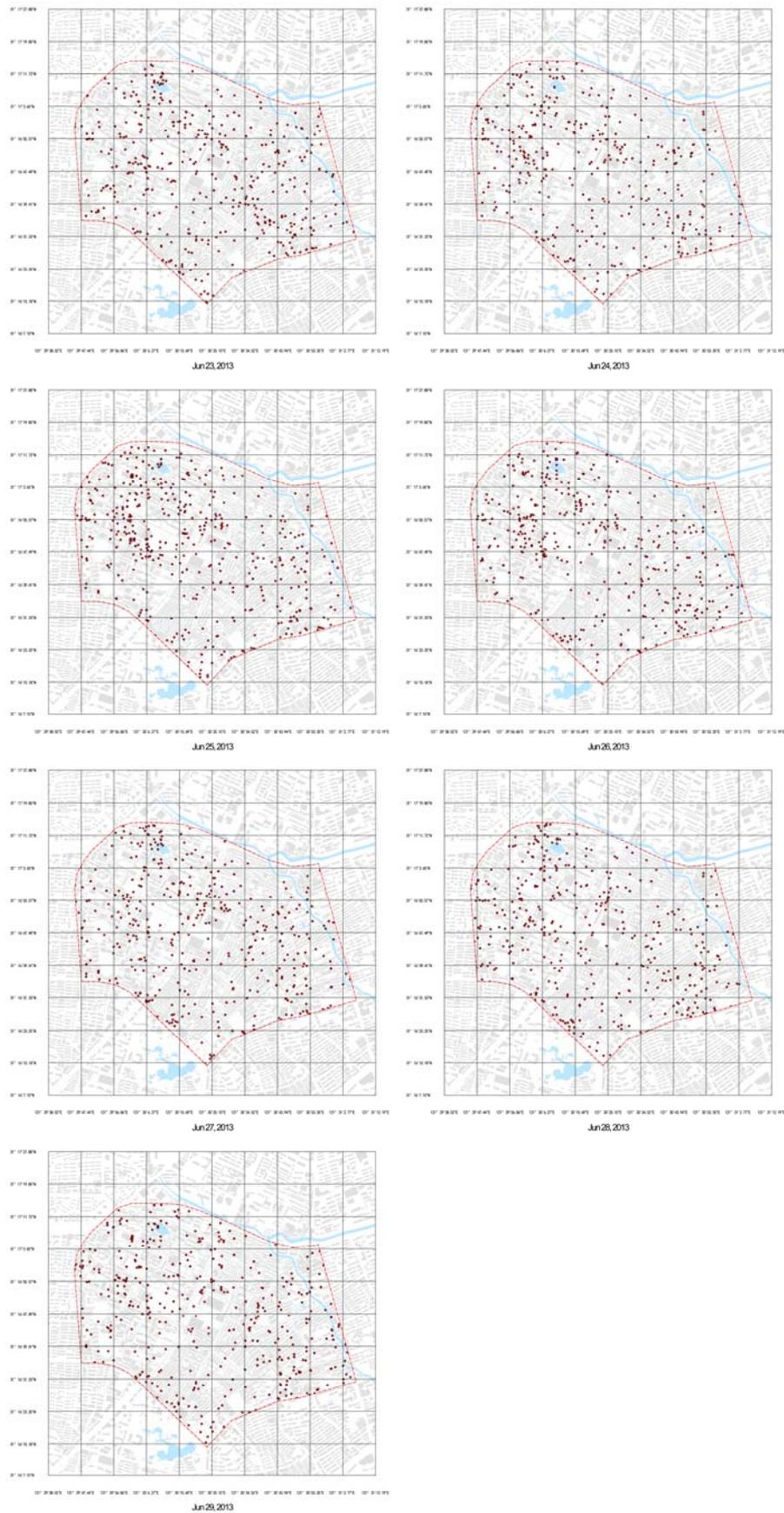
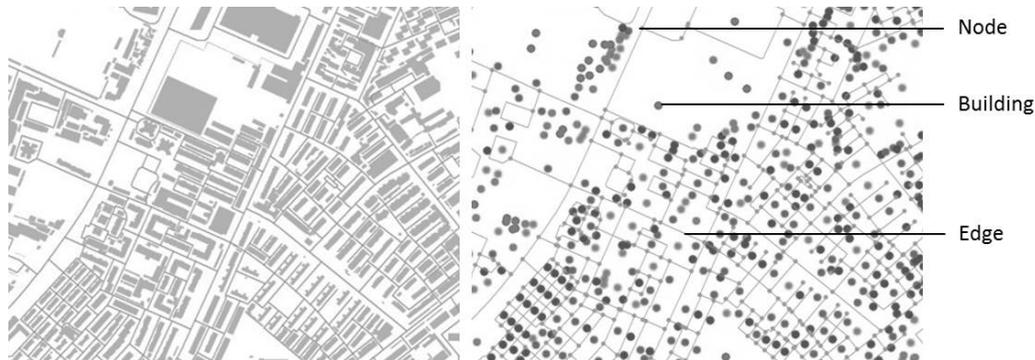


Figure 5: Daily scatter plots of Sina micro-blog, from Jun23 to 29, 2013
Source: Author's self-drawn in ArcGIS environment

3.2 Urban Spatial Network Analysis

As a mathematical method of quantifying how centrally each graph element is located with respect to the surrounding elements, the UNA toolbox abstract and simplify the topographic map of Tongji-Rim into a framework to represent the built environment before computation, which is illustrated in Figure 6. The left side of the figure presents a fragment of Tongji-Rim in topographic map. The same plan drawing is shown in abstracted graph form on the right. Analysis results of the five metrics are illustrated in Figure 7 and described each in detail below.



*Figure 6: Left: Detail Topographic Map of Tongji-Rim.
Right: a graph representation of the same plan drawing
Source: Shanghai Surveying & Mapping Institute and author's self-drawn*

To eliminate the edge effect, we use a larger network that represents the metropolitan environment as a whole (see Figure 7, Row 1, Left). Then we clip off the surroundings from the analysis and only focus on our case study area.

The reach centrality of a node describes the number of other nodes in the network that are reachable from it at a shortest path distance of at most radius input by researcher (here we adopt 500-meter radius). The right graph in row 1 of Figure 7 illustrates the Reach measure applied to buildings in Tongji-Rim. We see that areas with higher Reach values result in areas, where buildings are repeated with nearly the same volumes, more densely spaced, or where the street network is denser. Along Fuxin Road, Jinxi Road and Anshan Road, a typical building reaches roughly 300 other buildings in a 500-meter walking radius. To the contrary, in a campus area around Tongji, ten times less buildings can be reached during the same walk.

The gravity centrality of a node in the network is based on the intuition that centrality is inversely proportional to the shortest path distance between itself and each of the other nodes in the network that are reachable from this node within a radius. Whereas the Reach measure simply counts the number of destinations around each building within a given search radius, the gravity measure additionally factors in the spatial impedance required to reach each of the destinations. First introduced by Hansen (1959), the gravity remains one of the most popular spatial accessibility measures in transportation research (Sevtsuk 2012). Gravity can be seen as a revised version of Reach, introducing the effect of the distance decay on each shortest path. The left graph in row 2 of Figure 7 shows how Gravity is applied to the same dataset in Tongji-Rim as above. Since the index is sensitive to distance, we see how the values are less spread out than in the case of Reach.

The betweenness centrality of a node in the network estimates the number of times lies on shortest paths between pairs of other reachable nodes within the network radius (Freeman 1977). If more than one shortest path is found between two nodes, as is frequently the case



Figure 7: Reach, Gravity, Betweenness, Closeness and Straightness centrality in a 600-meter network radius in Tongji-Rim
Source: Author's self-drawn in ArcGIS environment

in a rectangular grid of streets, then each of the equidistant paths is given equal weight such that the weights sum to unity. As the name suggests, Betweenness may be used to estimate the potential of passersby at different locations of the network. The right graph in row 2 of Figure 7 shows the betweenness centrality of buildings in Tongji-Rim. Buildings that are located along the main thoroughfares, especially at the intersections, intuitively obtain higher Betweenness results, since such routes offer long and straight geodesic paths between numerous surrounding destinations.

The closeness centrality of a node in the network is the inverse of the total distance from itself to all other nodes that are reachable within radius along shortest paths (Sabidussi 1966). Unlike Gravity, Closeness does not use the weights of destination buildings in the numerator, effectively making the measure purely illustrative of how far a building is from its surrounding neighbors. The left graph in row 3 of Figure 7 illustrates how the values of campus area and some commercial office buildings are higher than residential districts, which is exactly the opposite of Reach and Gravity.

The straightness centrality of a node illustrates how closely the shortest network distances between this node and others which are reachable within a radius resembling Euclidean distances (Vragovic, Louis et al. 2005; Porta et al., 2005). Mathematically, it is a ratio between the as-a-crow-flies distance and the geodesic distance from each location to the surrounding locations. The right graph in row 3 of Figure 7 illustrates how Straightness, like Reach, picks up the buildings along some of the longest and straightest thoroughfares in the network. This is because such locations offer more direct travel routes to all their neighbors than buildings along less continuous streets.

3.3 Image Overlaying and Comparison

After graphication of micro-blog hotspots and visualization of the urban network attributes, we add them together to observe the matching degrees. Figure 8 to 12 demonstrate the overlaying of Sina micro-blog scatter plot (7 days) and each spatial centrality index analysis.

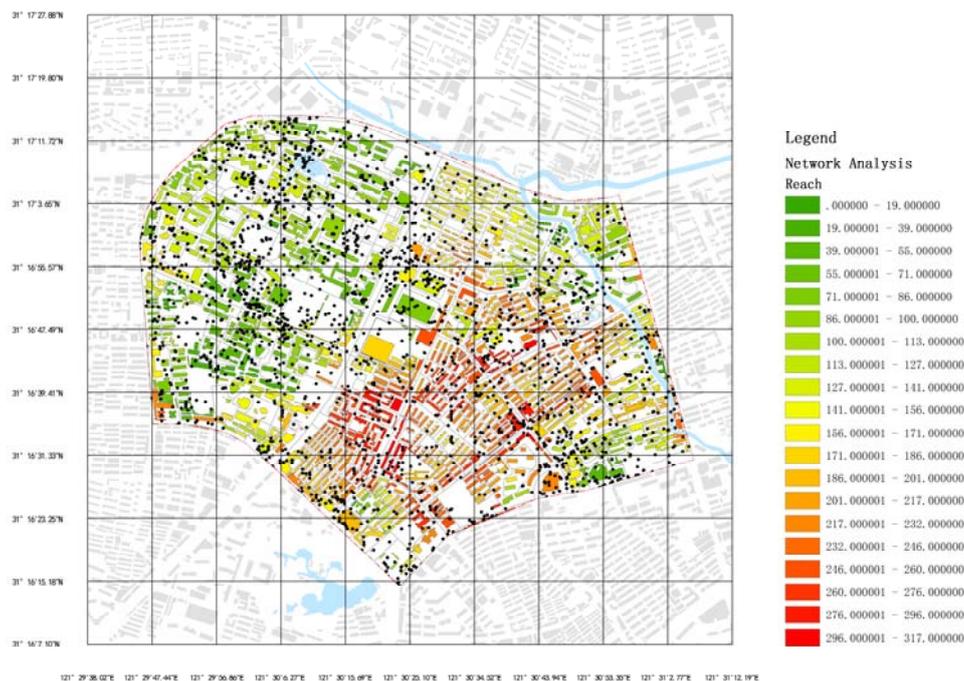


Figure 8: Overlaying of Sina micro-blog scatter plot and Reach centrality analysis
Source: Author's self-drawn in ArcGIS environment

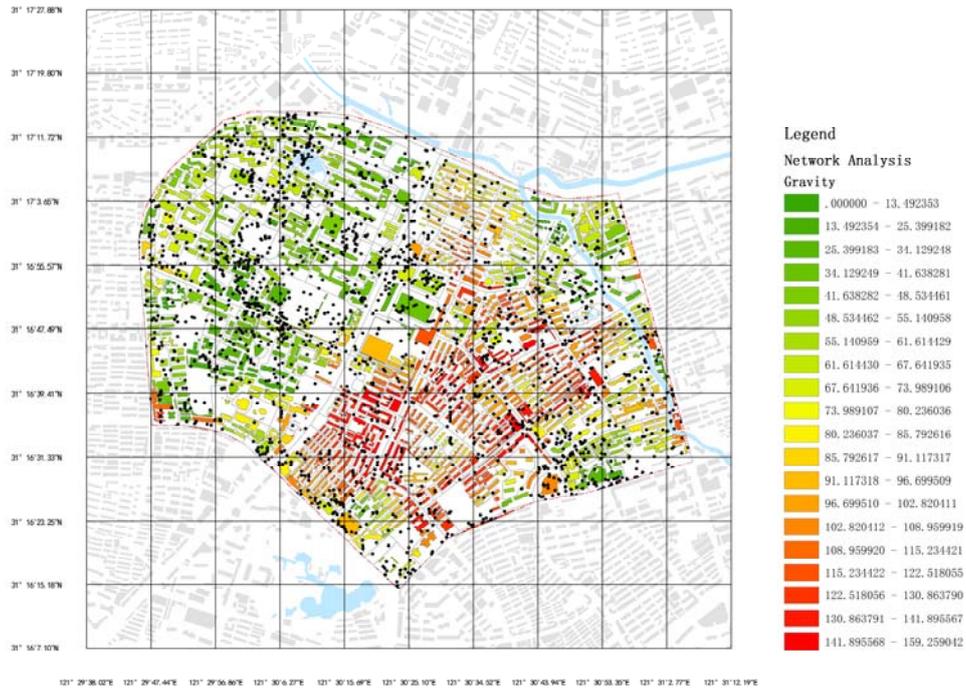


Figure 9: Overlaying of Sina micro-blog scatter plot and Gravity centrality analysis
 Source: Author's self-drawn in ArcGIS environment

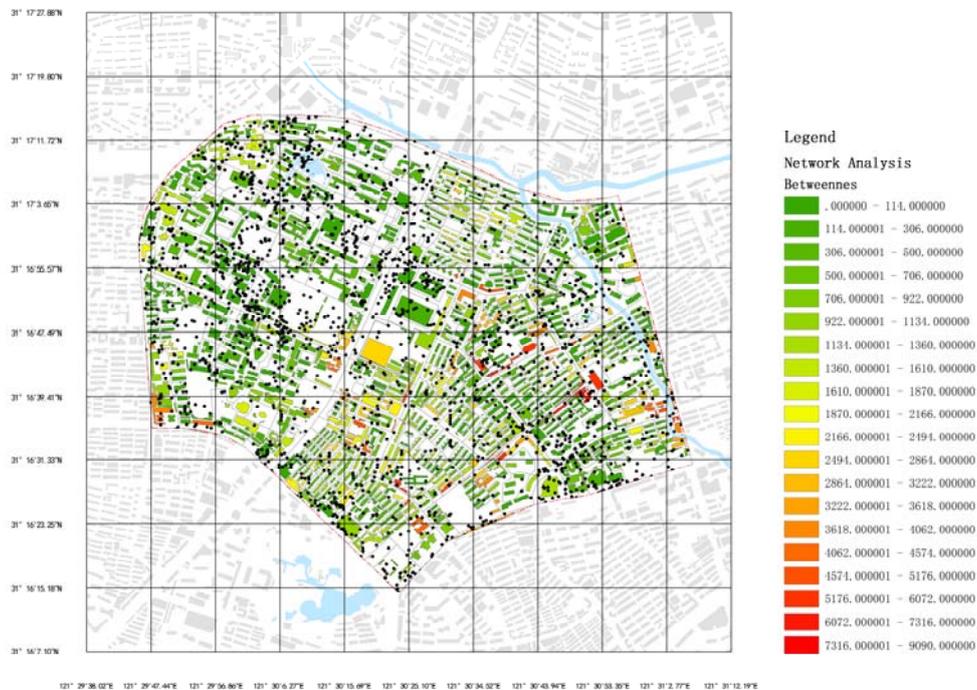


Figure 10: Overlaying of Sina micro-blog scatter plot and Betweenness centrality analysis
 Source: Author's self-drawn in ArcGIS environment

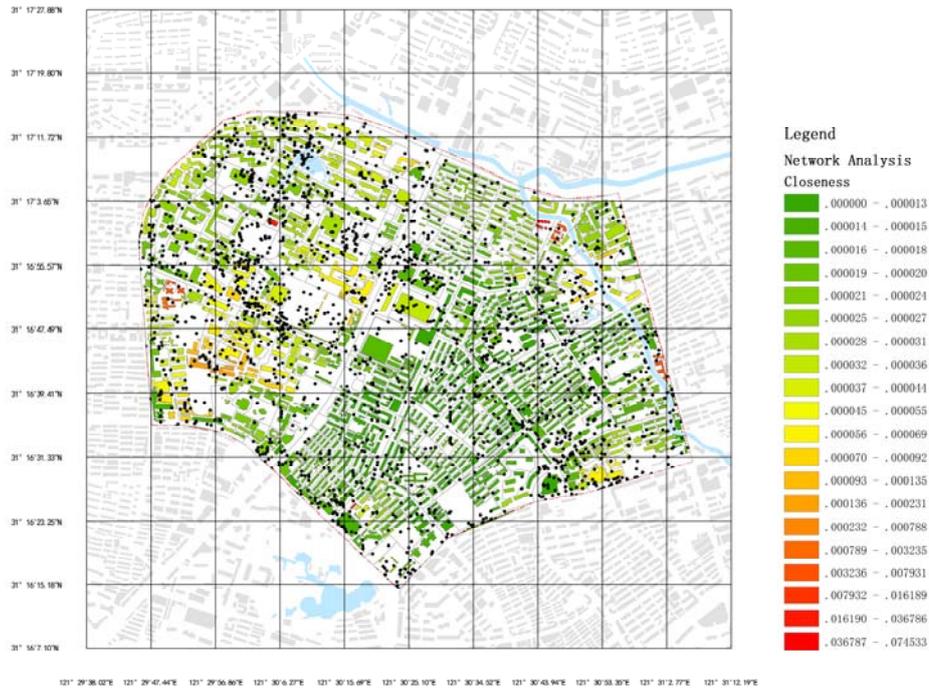


Figure 11: Overlaying of Sina micro-blog scatter plot and Closeness centrality analysis
Source: Author's self-drawn in ArcGIS environment

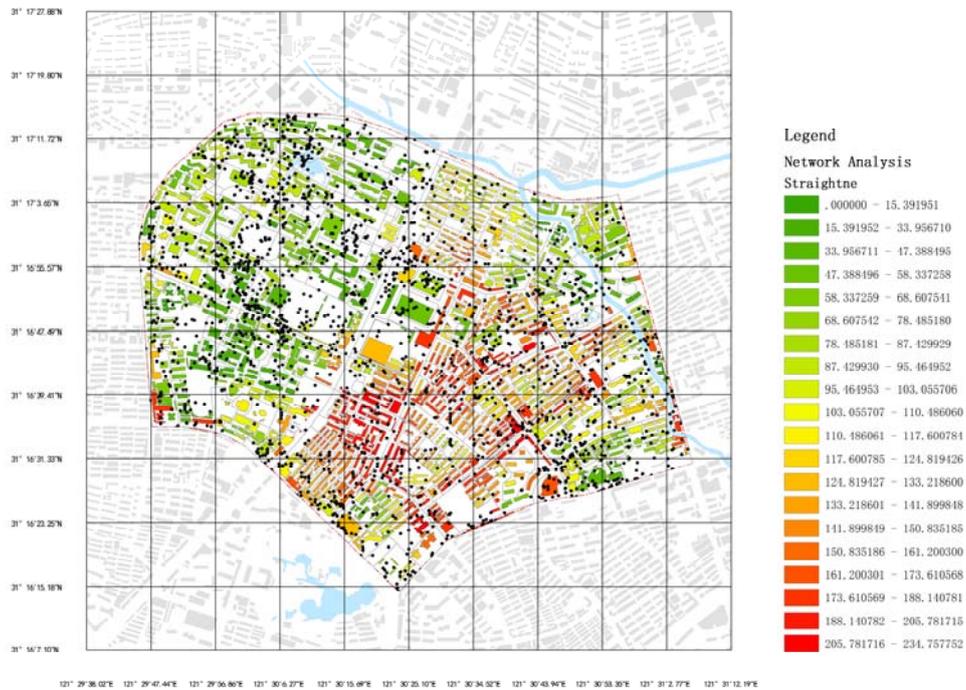


Figure 12: Overlaying of Sina micro-blog scatter plot and Straightness centrality analysis
Source: Author's self-drawn in ArcGIS environment

In Figure 8, the residential buildings in the southeast, especially some large public buildings at the gateway of the communities, have relatively higher reach values. However, the micro-blogs are not correspondingly denser in these areas. Obviously, more micro-blog dots emerge on Tongji campus, in the Tongji Union Square and the commercial area around Xinhua Hospital, where the building colors are green and yellow indicating lower reach levels. As a result, there is a negative correlation between micro-blog distributions and Reach centrality.

In Figure 9, like Reach, Gravity shows the same type of interrelation with micro-blog, just in different degrees.

Betweenness estimates the potential traffic passing by each location in the spatial network. In Figure 10, a small number of buildings with higher betweenness value, which look red and orange, are all situated in hubs or must-go-ways. There are micro-blogs showing up in these places, but more spots are also found in other greener region. Therefore, the interrelation of Betweenness and micro-blog appears more negative than Reach and Gravity.

Closeness indicates how close each of these locations is to all other surrounding locations within a given distance threshold. In Figure 11, most buildings with higher closeness values lie on the places where micro-bog spots are much denser and concentrated. Thus, contrary to Reach, Gravity and Betweenness, Closeness has a positive correlation with micro-blog distributions. This result can also be inferred through math deduction.

As in the above case of Reach and Gravity, Figure 12 shows that Straightness has the similar variation trend with them and resembles their correlations with micro-blog distributions as well.

4. Results

According to the three-step research methodology, we get the results as follows:

Firstly, in Tongji-Rim, the campus of Tongji University, the commercial area around Xinhua Hospital, and the intersection of the two thoroughfares -- Dalian Road and Siping Road are the hotspots of Sina micro-blog. Around these hotspots are the radiation areas, and the heat falls off gradually with distance.

Secondly, urban network centrality indices of Reach, Gravity and Straightness have the similar analytical outcomes that the multi-storey residential houses are the main objects with higher measuring values. Closeness performs oppositely, and Betweenness becomes more significant when buildings are located along the main thoroughfares, especially at the intersections.

Reach, Gravity, Betweenness and Straightness all have negative correlations with micro-blog distributions, but in different degrees. On the contrast, there is a positive correlation between Closeness and micro-blogs.

5. Discussion and Conclusion

The starting point of this paper is to make an exploration of the mutual relation between information technology and physical space, from a micro perspective of a small-scale urban area. The most interesting and challenging thing is that the former is unreal and the latter is real. To make the research more feasible, we choose China's widely popular social networking tools, Sina micro-blog as representative of information technology, and adopt the

spatial network centrality indices as measurement of physical space. After the three-step research above, we prove that there obviously exists interrelation between social network and urban spatial network. The former cannot exist isolated. It must take the latter as the support. In other words, any kind of information technology could not play its role without the material existence. While people utilize virtual social network tools, they must depend on the real space carriers. However, the reliance just means that virtual tools need a place for their users' existence. The place may overlap with everywhere of the users' lives. Information technology does not care about how far the place locates, and gradually takes away people's concept about distance. We can imagine that in the future a city's location or a building's site will become less and less important. The negative correlations between the four urban network centrality indices (Reach, Gravity, Straightness and Betweenness) and micro-blog distributions are explicit evidences. Meanwhile, the mathematically negative correlations of Closeness and Reach lead to the positive performance which exactly supports our points before.

To discuss in another way, people now share what they observe in their surroundings and their opinions about topics from a wide range of fields through micro-blog. Every piece of micro-blog they broadcast always is the thing they most concern about and want to show to others. Thus, in a sense, micro-blogging is a mirror that reflects people's real behaviors and preferences, or a filtered window through which we can see the most meaningful and significant parts of their daily life. Consequently, virtual network might be a digital attachment of the real world and their interrelation is reality and projection.

In addition, the residential communities where buildings have higher Reach, Gravity and Straightness values are actually the "model workers' villages", which are the special products of China's Planned Economy Era. These villages are characterized by the high-dense, multi-storey and same-looking buildings, as well as the large-scale parallel layouts, which provide a full explanation for the high level of Reach, Gravity and Straightness. Since last century the living condition of the "model workers' village" has deteriorated with the aging of the infrastructure, but there are lots of families who cannot afford a better habitat still abiding in it. The "model workers' village" falls into a gathering nest of the poor people, who are scarcely possible to use the micro-blog or other social networking service tools. By contrast, there are more chances that the college students, the white collars and the other upper-middle class micro-blog on campus, in the commercial offices or the apartments, where the building density is lower and the volume is larger. Hence, the correlations of the urban network centrality indices and the micro-blog distributions reveal the social rules and the meanings behind the appearances.

Admittedly, as a newly emerging social networking service tool, micro-blog is still in its infancy. Its interaction with the geographic entity space remains to be verified from various dimensions. But undoubtedly, the new urban spatial form brought by this powerful social dynamics will strongly change people's life styles and ideas.

References:

- Castells, M (1996) *The Rise of the Network Society: The Information Age, Economy, Society and Culture Volume I*, Cambridge, MA: Wiley-Blackwell.
- Eduardo, R. and Vagelis, H. (2013) "Measuring and Summarizing Movement in Micro-blog Postings", the 7th International AAAI Conference on Weblogs and Social Media, 8-10 July 2013, Boston, USA.
- Freeman, L.C. (1977) "A Set of Measures of Centrality Based on Betweenness", *Sociometry*, 40, pp.35-41.
- Hansen W.G. (1959) "How Accessibility Shapes Land Use", *Journal of the American Planning Association*, Vol. 25, No. 2, pp.73-76.

- Liu, Yang (2010) "Micro-blog: Happy Words from Media Age", Today's Massmedia, Vol. 1, pp.34-35.
- Nagarajan, M., Gomadam, K., Sheth, A., Ranabahu, A., Mutharaju, R. and Jadhav, A. (2009) "Spatio-Temporal-Thematic Analysis of Citizen-Sensor Data -- Challenges and Experiences", Tenth International Conference on Web Information Systems Engineering, 5-7 October 2009, Poznan, Poland, pp.539-553.
- Porta S., Crucitti P., Latora V. (2005) "The Network Analysis of Urban Streets: A Primal Approach", Environment and Planning B, Vol. 35, No. 5, pp.705-725.
- Porta S., Crucitti P., Latora V. (2008) "Multiple Centrality Assessment in Parma: A Network Analysis of Paths and Open Spaces", Urban Design International, 13, pp.41-50.
- Porta S., Strano E., Iacoviello V., Messori R., Latora V., Cardillo A., Wang F. et al. (2009) "Street Centrality and Densities of Retail and Services in Bologna, Italy", Environment and Planning B: Planning and Design, 36, pp.450-465.
- Sabidussi G. (1966) "The Centrality Index of A Graph", Psychometrika, 31, pp.581-603.
- Sakaki, T., Okazaki, M. and Matsuo, Y. (2010) "Earthquake Shakes Twitter Users: Real-time Event Detection by Social Sensors", the 19th International Conference on World Wide Web, pp.851-860.
- Sevtsuk, A., Mekonnen, M. (2012) "Urban Network Analysis Toolbox," International Journal of Geomatics and Spatial Analysis, Vol. 22, No. 2, pp.287–305.
- Vragovic I., Louis, E. Diaz-Guilera, A. (2005) "Efficiency of Information Transfer in Regular and Complex Networks", Physics Review E., 71(026122).
- Zhan, Z. (2011) "Research Review on Micro-blog", Journal Of University Of Ji'nan (Social Science Edition), Vol. 21, No.1, pp.34-37.
- Zhen, F., Wang, B., Xi, G. and Chen, Y. (2013) "Research on China's Urban Network Based on the Relations between Micro-Blog Users: a Case Study of Sina Micro-Blog", Proceedings REAL CORP 2013 Tagungsband. 20-23 May 2013, Rome, Italy. pp.779-792.

From “Insertion” to “Incorporation”: the Hangzhou Example of the Transformation of the Railway in Chinese Urban Life

Shan He, University of Western Australia, Australia

1.0 Introduction

With the fast development of the national High-Speed Rail (HSR) network, the Chinese government is making efforts to maximise the geographical agglomeration effects that will be brought by the HSR, or in other words, it is planning to utilise the predicted “HSR” economy to “accommodate and channel the demand of urbanisation” (Chen, 2012: 315). We have subsequently witnessed a wave of building new towns around the station nodes in recent years. For instance, as Dong (2011) reported that, along the Beijing – Shanghai HSR line, almost all of the 24 stations have developed new town proposals, of which 16 are under construction. Therefore, we expect the development of an urban life that is tightly connected to, and fully oriented towards, the HSR infrastructure and station nodes within the new towns. Identifying how rail infrastructure has powered urban development and urban life over the century in China will help us to plan and design the new towns.

This paper takes Hangzhou City, capital of coastline Zhejiang Province, as an example, to explore such relationships between rail and urban developments in three typical historical periods: late imperial and early industrialisation (1900s-1930s), Communism industrialisation (1950s-1970s), and recent urbanisation (1980s-2000s). These periods witnessed noticeable developments in rail infrastructure and urban growth, which were however powered by substantially different mechanisms. By examining the connectivity between rail and urban life from various historical perspectives, we will have better understanding of today’s HSR town planning and design practices.

2.0 “Insertion”: The Late Imperial and Early Industrialisation Period (1900s-1930s)

Historically, imperial Hangzhou has a prestigious position within the urban hierarchical system in the Lower Yangtze Delta Region, and developed various scales of trading life in and outside of its city walls. The coming of the railways in the early 1900s, however, reshaped the urban system and the city’s identity, bringing a never before experienced prosperity to urban life.

2.1 Profile of Late Imperial Hangzhou

Sitting at the southern end of the Grand Canal and estuary of the Qiantang River, Hangzhou has been long established as the trading centre of the Lower Yangtze Delta Region, based on the water transportation network prior to industrialisation. Taking advantage of the canal’s role as the spine of north-south commodity trading in China, Hangzhou functioned as a trading hub. This trading system extended further west into the Jiangxi and Anhui provinces through the Qiantang River and its branches, which further consolidated Hangzhou’s dominant position among other cities since the period of the Southern Song Dynasty (AD 1127-1279), when this town was established as the imperial capital. Periods of prosperities have been recorded during near 800 years till late the Qing Dynasty (AD 1636-1912).

Over time, the walled up area of Hangzhou (i.e. the “Chengguo”) has most been retained and the area of city has remained relatively constant. As by the Hangzhou Municipal Government

in 1937, this is a traditional city with a long history; all of the buildings were built following ancient orders through dynasties, and variations in architecture were rarely challenged. There was however one area in Chengguo that distinguished Qing's Hangzhou from previous dynasties, also known as the "Qiyin", or, the Manchu Barracks. To symbolise the Manchus' occupation of this important town, especially as a regional military centre, the Qiyin was sited along the eastern edge of the West Lake, a place of natural beauty and cultural significance that the city had been long proud of. The Qiyin's 3-mile perimeter enclosure blocked direct contact with the lake from the town, and eventually shaped an urban life disconnected from the precious landscape (Wang, 1999). In-town commercial life was organised by the central axis street or, the "imperial spine" during the Southern Song. It was noticeable that the other major two markets were outside of the Chengguo: one in Gongchenqiao (wharf on the Canal) and the other in Zhakou (wharf on Qiantang River). This means the life inside and outside of the circumvallation was at different scales, the former focusing on local life while the latter represented the city's status in national trading.

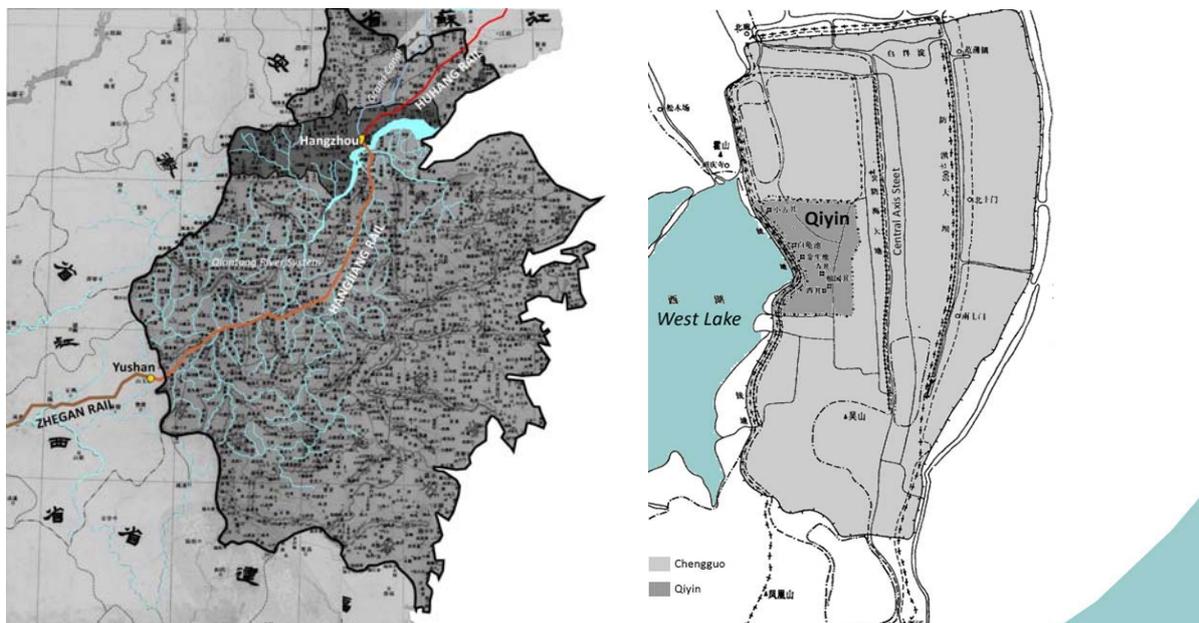


Figure 1: Map of Zhejiang in 1900s-1930s (left, adapted from ZASMAG, 2011: 150-1) indicating River and Rail systems and Hangzhou; Map of Hangzhou Chengguo (right, source: Yu, 1985: 63)

2.2 The Insertion of Three Rail Lines

In 1907, Hangzhou's first rail service, a 16 kilometre local line named "Jiangshu", was put into use after one year's construction. As a part of the proposed "Huhang" (Shanghai-Hangzhou) rail, this line connected both the wharfs of Gongchenqiao and Zhakou, which presented a clear attempt at improving the connections between the two water transportation systems of the Grand Canal and Qiantang River. This was a scale that did not involve the inner city life, which explains why the trains ran on a curve around the perimeter, and all of the five stations were placed outside of the city wall.

The Jiangshu Rail was partly connected with the Huhang Rail after two years' operation, and Hangzhou was for the first time linked with Shanghai by the 186 kilometre length of tracks in 1909 (Yu, 2005). This line was soon populated, but the stations outside of the city walls made trains less accessible, especially when the curfew system was still executed during the late Qing Period. Despite concerns of city defence, decision was later made to build a new station inside the "Chengguo" for direct connections. In 1910, parts of the walls were pulled

down and for the first time, the rail penetrated into the town to serve a new inner town station, "Chengzhan".

The third rail, initially named the "Hangjiang" Rail linking Hangzhou and Yushan County in Jiangxi Province has operated since 1933. In 1934, it was renamed "Zhegan" Rail with plans for further extension to Nanchang City, the capital of Jiangxi Province, and eventually Zhuzhou of Hunan Province, winding its way 1,008 kilometres (Yu, 2005). The extension was finished in 1937, stretching Hangzhou's accessibility further into the agriculturally productive inner-land provinces of Jiangxi and Hunan.

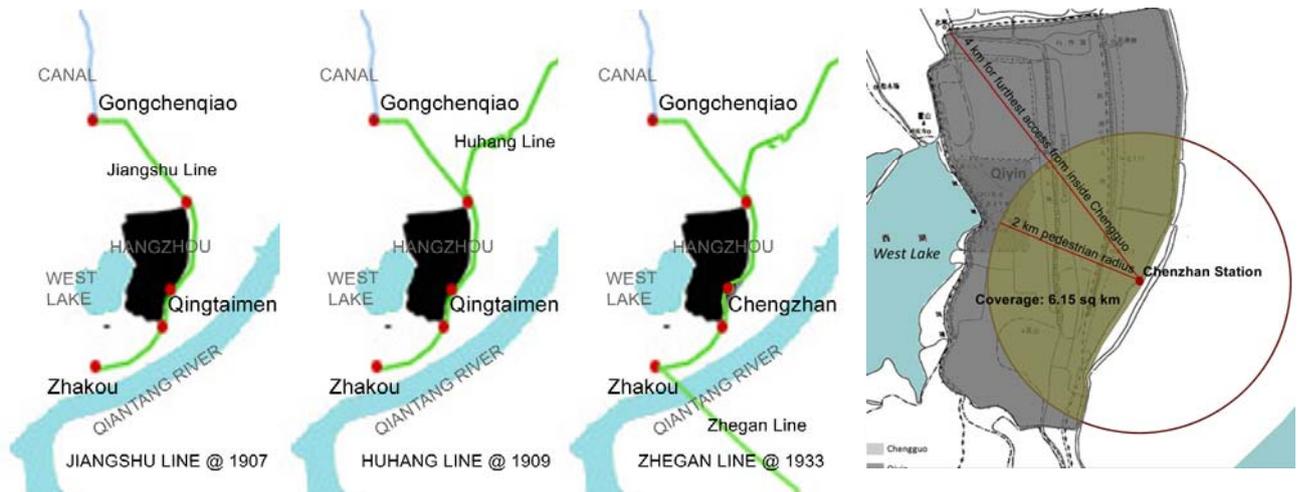


Figure 2: Insertion of three rail lines (source: Que, 1999; Hangzhou Archives, 2006) and the accessibility of Chengzhan (right end)

2.3 The Re-interpreted Urban Life of Hangzhou

By creating passage ways through the walls, the inner town of Hangzhou was connected into a new hierarchy networked by railways, which was centred in Shanghai. The increasing use of rail infrastructure (Ma, 2008) eventually defeated the traditionally dominating water transportation that had been historically established around Hangzhou, as widely documented (Ding, 2005; Su, 2011). Shanghai, powered by the rail lines linking Hangzhou and Nanjing and with the geographical advantage of the Yangtze River's estuary, experienced a dramatic industrialisation and expansion, and soon consolidated its leading role within the urban system of the Lower Yangtze Delta region.

Three urban changes were observed after the railways were built among Hangzhou's circumvallation, as discussed in the following paragraphs.

First, the direct contact of Shanghai with Hangzhou through the railway re-identified these two cities through increased competition and collaboration. As Shanghai became the industrialised centre of the Lower Yangtze Delta Region, Hangzhou was tightly integrated to this city by rail infrastructure, and gradually Hangzhou became the hinterland of Shanghai's economy (Tang, 2009). In fact, Shanghai nearly dominated the entire import and export trading businesses of Hangzhou (Han, 1951). Under the shadow of Shanghai, Hangzhou could hardly expect a return to the role of the "nationally important town of craft industries and enterprises" during the imperial era, as described by Fu (1985). By losing its long-established identities, Hangzhou City was in search of new methods to rebuild itself.

The rail brought this opportunity after the 1911 Revolution against the imperial monarchy. In Hangzhou, the new republican government took over power from the Manchus, and demolished the symbolic Qiying. Direct contact between lake and city was recreated. Based

on the natural and cultural landscape resources from the West Lake, land released from the Qiying provided an opportunity to shape a new industry: tourism. This land was developed fully oriented towards the needs of tourists, of which the emerging middle class in Shanghai made up the majority (Wang, 1999). With 3-5 hours' travel on the Huhang Rail, the Shanghai white collars were able to spend their weekends on the West Lake, which then earned the name of "Shanghai's backyard." The Zhegan Rail Company further amplified Hangzhou's importance in the new tourism industry by extending further west, into the freshly opened up mountains and rivers along its tracks. Through the rails, Hangzhou City successfully reshaped itself not only as a destination, but also a regional hub of the tourism industry, which has been lasting up to today.

Secondly, by passing through remote villages, the rail infrastructure powered Hangzhou's urban population growth in the 1930s. According to Ding (2009), the Zhegan Line penetrates the drainage areas of the Puyang River and Lanjiang River (both are branches of Qiantang River), with an estimated population of about 3.3 million during the 1920s/30s. Running on the Zhegan Rail, mountain topographies were never barriers, and images of the historically water-connected and rarely touchable cities such as Shanghai and Hangzhou were no longer mysteries. The rail access triggered the mobilisation of labour. Ding (2009) estimated that 7 million passengers travelled on the Zhegan Rail between 1930 and 1937, about one million annually, which was one third of the population along this rail. On the other hand, Hangzhou witnessed a fast population increase during the 1920s/30s. Ding (2007) revealed that between December of 1928 and July of 1930, a rise of about 42,000 urban dwellers was recorded, of which near 95% was from immigration.

Thirdly, the activated flow of passengers restructured Hangzhou's urban space. As the rail lines were serving as the artery of long-distance transportation, the historically dispersed inter-city traffics around the circular gates was condensed around the station area, gradually transforming it into a new market space. As recorded, there were hotels, restaurants (various flavours), and photo galleries clustering around the station (Yao, 2011). The flourishing market around the station area enriched the traditional single-core commercial layout of the city's inner area; and with the other emerging market on the Qiying's site, which was another benefit from the rail passengers, Hangzhou restructured its commercial layout into five markets of the city (Chen, 2008), each with a specific orientation and group of clients.

2.4 Analysis

To summarise, 1930s Hangzhou enjoyed a never experienced prosperity since the imperial ages. This was in large triggered by the insertion of rail infrastructure, bringing new industry, enriched constitution of population, as well as dynamic commercial life. If we have a closer observation, the following understandings are valuable for today's practice.

First, through the operation of rail, a certain level of urban agglomeration/competition between connected cities is observed. The increased mobility between cities allowed urban resources (especially the human and capital resources) to relocate themselves towards maximised efficiency/profit. This explains why Hangzhou lost its manufacture but gained the tourism industry. It is also noticeable that the capacity and efficiencies provided by rail infrastructure in 1920s/30s defines the geographical scope for such effect to take place. The 3-5 hour travelling time between Hangzhou and Shanghai indicates that cities within about 150km distance probably have the potential for effective urban industry re-distributions.

Secondly, increased connectivity between rural and urban China benefits cities with extended hinterlands into far remote areas. New resources such as raw material, market, and population were available to support the growth of industries and urbanisation. In Hangzhou, this was verified by the increased urban trading activities and population.

Thirdly, at the local scale, rail stations were easy to access. This enhanced the influence of rail infrastructure in urban life. In Hangzhou, the 13 square kilometre Chengguo extends about 5 kilometres north-south and 3 kilometres east-west. This is a typical size among the traditional walled-up Chinese cities, based on urban traffics from man/livestock powers. Even if the train station was sited to the east-south corner of town, the 2 kilometre pedestrian radius covers 6.15 square kilometres, nearly half of the urban footprint. And the furthest point from station was about 4 kilometres away, taking approximately one hour's walk. It was also important that the West Lake is 2 kilometres away to the west of the station, half an hour's connection on feet. Walkable connection of the station makes it accessible for almost the entire residents and visitors of this town.

3.0 “Isolation”: The Communism Industrialisation Period (1950s-1970s)

Within the Communism Industrialisation period, the national strategies for fast modernisation and socialisation dictated both rail and urban developments, and is typically represented in the policy of heavy industry development prioritisation and the “Hukou” (dual residence registration)¹ system between rural and urban dwellers. As a result, however, history witnessed a process that rail was disconnected from urban life.

3.1 Hangzhou’s Dilemma between “Consumption” and “Production”

In March 17, 1949, the *People’s Daily* published the editorial article, titled as ‘*Transform the Consumptive City into the Productive City*’. This announced that heavy industry developments would be prioritised following the establishment of the People’s Republic, as a fast way to achieve the nation’s modernisation.

The national orientation at the heavy industries put Hangzhou, with its established reputation of tourism, into a dilemma between “consumption” and “production”. Although the city’s first planning drafted in 1953 valued its established importance of culture and landscape (An, 2011), it was unfortunately hardly executed in the following years. Since the launch of Great Leap Forward initiated in 1958, the Chinese cities were exclusively involved in the national fever of industrialisation that “overwhelms everything” (Meisner, 1999). In 1959, Hangzhou drafted the second planning proposal with its urban character redefined as “hybrid industrial city based on heavy industries” (Bian, 2008).

In fact, Hangzhou did not see a booming urban transformation into an industrial centre during the years that followed. The new cluster of factories was built on remote agricultural lands far from the centre, typically as the Iron and Steel Factory of Hangzhou (ISFH). Within the planned economy system, this factory was later developed into a self-sustained industrial town that provides from “cradle to tomb” services for its “cadres and workers”. In compare, the conventional town area of Hangzhou was branded with “non-production”, and was unavoidably led to the wane during the three decades since 1950s. To secure the limited resource for developing heavy industry, the percentage of state investment in central Hangzhou dropped significantly from about 50% in middle 1950s to slightly over 20% in 1960s/70s (Hangzhou Revolution Committee, 1981: 7). No doubt the city was struggling to provide basic life support in the 1970s, and won it the famous folk saying, “beautiful West Lake, ragged town.”

3.2 Unbalanced Rail Development and Isolated Urban Life

Within 1950s/70s, the rail infrastructure saw an unbalanced growth in freight and passenger transportations, making unequal choices between “production” and “consumption.” The target of industrialisation powered sharp increase of freight transportation on tracks. In compare, the rail passenger number experienced fluctuations in 1960s and had a slower

growth afterwards (Ministry of Rail, 1999: 373), which is mainly accused to restrains in “consumption” and rural population movements.

In Hangzhou, the only new rail line built during this period was the freight line connecting the ISFH to the national rail network, to support the steel manufactures. Since Hangzhou developed a very different urban life in the ISFH area and city centre area, the following discussion will interpret their relationships with rail separately.

Given the poor social documentation during the decade of the Cultural Revolution (1966-1976), the *Simplified Hangzhou Traffic Map* published in 1971 is analysed in this study to describe the relationship between the rail and civic life. This map clearly shows the bus routes serving metropolitan and regional destinations. Considering Hangzhou's urban transportation of that age, when there was no metro-line, few taxis, and nearly zero private vehicles, the bus route map recorded the movements of urban life. Through summarising this map, we find that urban transportation was structured by a number of bus hubs, namely Wulinmen, Hubin, Nanxingqiao, Genshanmen, Gongrenlu, and Gongchenqiao. These hubs networked on both metropolitan and regional scales. The rail station, however, was not among the named hubs. It was connected only with in-town destinations, which means that regional passengers had to access the station via any of these bus hubs. If we do a closer study of the number of bus lines connected, the station was served by only three in-town lines, compared with Wulinmen, a hub next door to the coach station, which was served by 7 lines of which 2 were regional.

This map clearly indicates that: a) the rail station was connected mostly with urban dwellers, and; b) villagers from nearby rural Hangzhou were the major visitors in this town, as indicated by the number of bus lines connecting coach/rail stations. As rail was serving as the main transportation for long-distance travels, the weak connection between rail station and urban transportation hierarchy tells that 1950s/70s Hangzhou was not closely integrated with the rest of China, neither urban nor rural.



Figure 3: *Simplified Hangzhou Bus Map, 1971 (left) and Hangzhou Planning Map, 1973, showing the location of ISFH in relevant to the conventional centre (source: Que, 1999)*

The ISFH area is sited 12 kilometres north of central Hangzhou, therefore developed as an "industrial island floating on the agricultural lands." As a typical example of state-owned large size industry within the planned economic framework, a "worker's town" (Shenghuoqu) was

built near the factory site to accommodate its staff. Instead of a satellite town, this is a self-sustained "living workshop" incorporating various life supporting facilities, such as massive rowed apartment housing, hospital, schools, and shops. During the 1980s, the Shenghuoqu grew to a size of about 9,746 residents (Zhang, 1985). As described above, a rail line was constructed in the late 1950s to link the ISFH into the regional rail network. This line was then used exclusively for freight services. As there was only one direct road link between this industrial dwelling town and the city centre, with one bus route that normally took about 40 minute-1 hour to access the edge of the city, there was however never a plan to provide passenger service on the established rail.

3.3 Analysis

In general, rail developed very different connectivity of freight and passenger transportations for this period, as a result of the national strategies and policies. Rail played important role in developing national heavy industries. On the other hand, the connectivity between rail and urban life was declining or even missing, as presented in Hangzhou's case.

First, the practice of urbanisation during this period was applied as a facilitating instrument for national industrialisation, such as the Shenghuoqu in the ISFH case. The Communist pattern for "production" was developed in a self-sustained template and isolated from life in conventional urban centres. The move of goods is prioritised than people. There is hardly any necessary connection between the rail infrastructure and the urban life emerging around new factories, which explains the never appeared transformation of freight link into passenger service in ISFH.

Secondly, for the conventional cities, the compression of "consumption" led to serious damage of the urban industries which had been long established prior to the coming of Communist industrialisation. This included businesses born from the early coming of rails, such as the tourism. The decline of urban "consumption" industries limited rails connectivity with conventional city centres.

Thirdly, as the Hukou system successfully screened massive rural population out from immigrating into cities, urban China merely became destinations of short travels from nearby villagers. The connectivity between vast rural China and rail was unfortunately lost.

Although industrialisation promoted rail technologies into higher speed and capacities since 1950s, the dis-connectivity with people suggests that rail failed to power urban developments. This is also true for the emerging new towns around factories.

4.0 "Marginalisation": The Recent Urbanisation Period (1980s-2000s)

The fast and large scale urbanisation within the recent three decades re-powered developments in transportation. The rail, with a constant focus at the national scale operation, was not successful in keeping its connectivity with the fast physical expanding of urbanities. Eventually rail developed a marginal role in the urban life which was overwhelmed by roads and vehicles.

4.1 Hangzhou's Fast and Large Scale Urbanisation

Since 1980s, Hangzhou reshaped its identity through three urban planning amendments in 1983, 1999 and 2007, achieving a balance between "consumption" and "production". The tourism industry was rebuilt with respect to the city's rich culture and landscape resources, and targeted at national and international tourists. The re-oriented and growing urban ambitions triggered fast and massive urban expansion, as well as population inflation of Hangzhou during the recent three decades.

There were two municipal boundary expansions in Hangzhou between the 1980s and 2000s. Beyond the inherited municipal area of 430 square kilometres in 1970s, the first expansion in 1981 extended south across the Qiantang River for an extra 253 square kilometres to accommodate new industrial developments. In 2001, a second expansion merged two districts from north-east and south-west, making Hangzhou occupying 3,068 square kilometres and “the second largest city next to Shanghai within the Lower Yangtze Delta Region” (Zhu, 2002: 23).

In parallel, the urban footprint size rose sharply during the same period. Starting from 102 square kilometres in 1981 (Hangzhou Revolution Committee, 1981), about 80% increase was recorded within the two decades that followed. In the next ten years, however, soaring developments further doubled the size of urban footprint, standing at 413 square kilometres in 2010 (Hangzhou Statistics Bureau, 2012), 31.8 times of the ‘Chengguo’ size from imperial Hangzhou.

Hangzhou's population growth saw a similar record with the urban expansion which is not only a statistical increase, but geographical re-distribution. The entire population had a rise of over four times within the three decades starting from 1980, reported at 4.35 million in 2010 (Hangzhou Statistics Bureau, 2012). Meanwhile, the central area lost about 30% population between 1990 and 2000, with peripheral areas densified 3 times by new dwellers in the same period (Feng & Zhou, 2002).

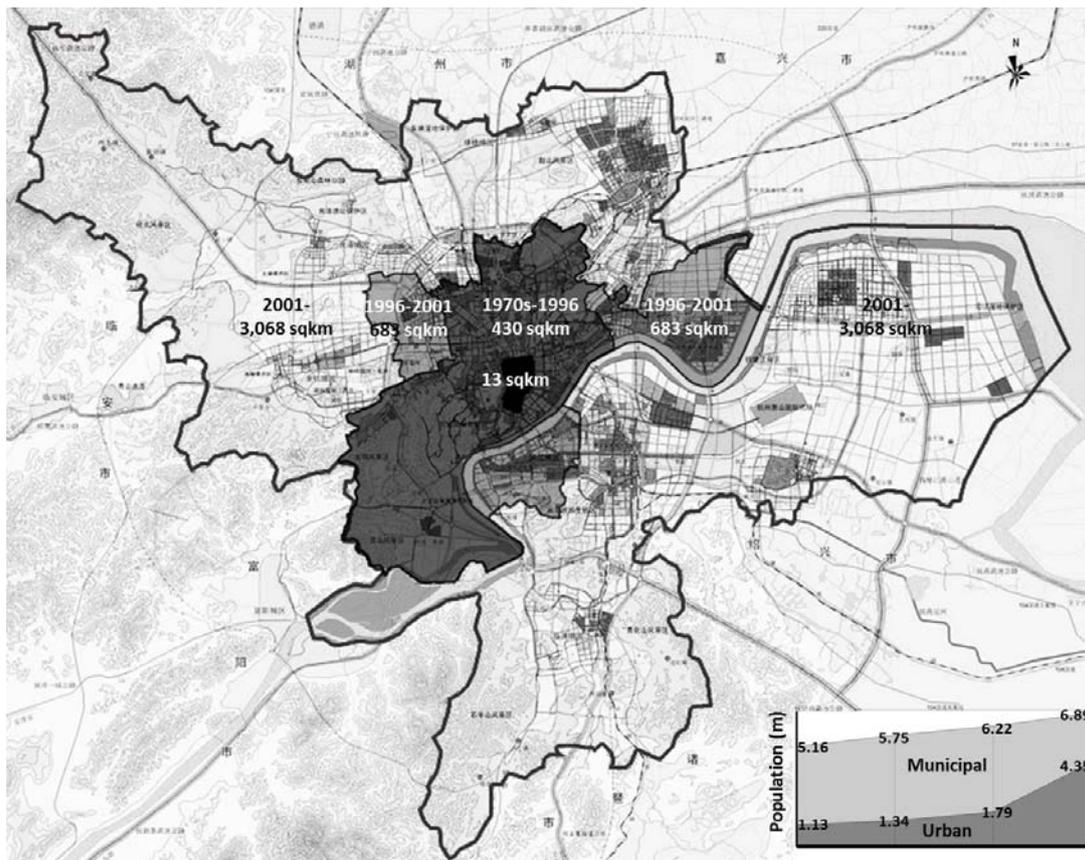


Figure 4: Municipal Boundary Expansion and Population Increase of Hangzhou (source: Hangzhou Planning Bureau; Hangzhou Statistics Bureau)

Despite the fast expansion, Hangzhou did not see the dispersing of its centre. The central area, which largely overlaps with the imperial Chengguo, remained a strong core integrating the major public urban lives, such as political, commercial, cultural, and financial centres

(Luo, 2005). The recently developed fringe areas were struggling to establish contact with the conventional centre.

By putting together the above information, we find expanded urbanity, a robust central core, an increasing population and growing fringes. It is a safe prediction that the traffic demands between the new developed peripheral areas and the conventional city centre will exhibit constant growth. How much, then, does the rail system channel these demands?

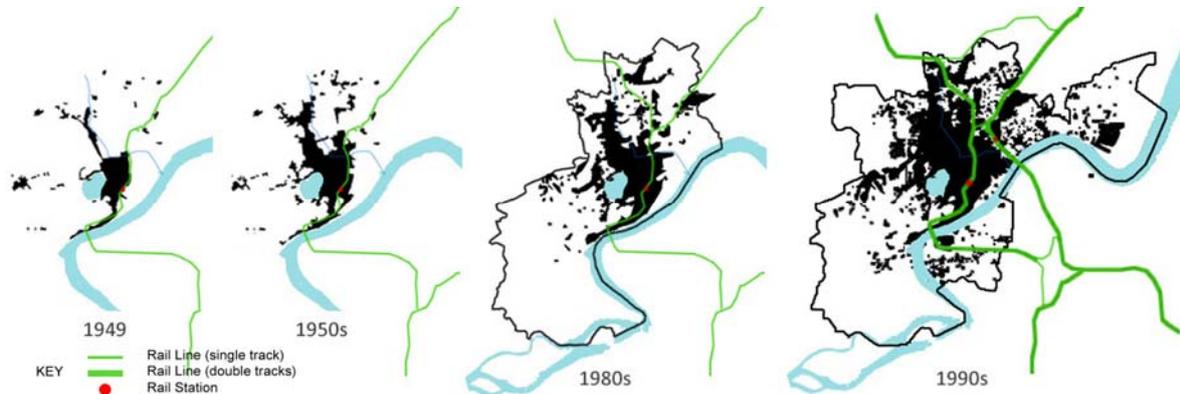


Figure 5: Hangzhou Urban Footprint and Rail Developments between 1949 and 1990s (source: Feng, 2003; Qin, 2010; Yu, 2005)

4.2 The Competition between Rail and Road Infrastructures

The rail lines around Hangzhou were improved since the 1980s principally in three ways: Existing single track rail lines connecting Hangzhou to major domestic destinations were upgraded to double tracks; new lines cutting through the town was built to release traffic pressure on old lines, including a second rail bridge on the Qiantang River; and a passenger line, named Xuanhang Rail linking Hangzhou to Xuancheng in Anhui Province about 230 kilometres away.

To accommodate the growing number of passengers, the old station, Chengzhan, was rebuilt in late 1990s and stretched vertically on its old site. The previous Nara style building was replaced by an 18 floor high-rise complex, integrating commercial, hotel and administration functions. Another station, “Hangzhou East” was built in 1992, sitting on the new rail link penetrating the east part of the city. As a complementary station, it serves the passenger trains that pass through Hangzhou, while the Chengzhan was targeted at termination services.

In principle, we have seen new tracks and stations developed between 1980 and 2000, targeting at improving Hangzhou’s connection with the rest of China, and enhanced the rail’s capacities on transportation. Nevertheless, if we overlap the rail map on top of the vastly expanded municipal boundary and urban footprint of Hangzhou, it is disappointing that the tracks are not supporting the city’s geographical growth. The railway has been focusing on linking national destinations while local/regional coverage was not within its scope. This is verified by the transportation performance statistics in Hangzhou, both for freight and passenger services. The percentage of passengers travelled on rails dropped over half during the three decades, while the percentage of freights unbelievably shrunk over 90% (Fig.6)

In compare, we have witnessed constant growth in road users in the past 30 years. The percentage of vehicle passengers rose nearly 1.5 times since 1980, close to 90% in 2010; while the freight traffic doubled respectively (Fig.6). This is even true by reading the increase

of road length, four times between 1990 and 2010 (Wang, 2005); and spring vehicle registrations, increasing near fifty times for the same period (Zhong et al., 2013). It is safe to conclude that the vehicles have channelled most of the growing demands for transportation that rail has failed to meet.

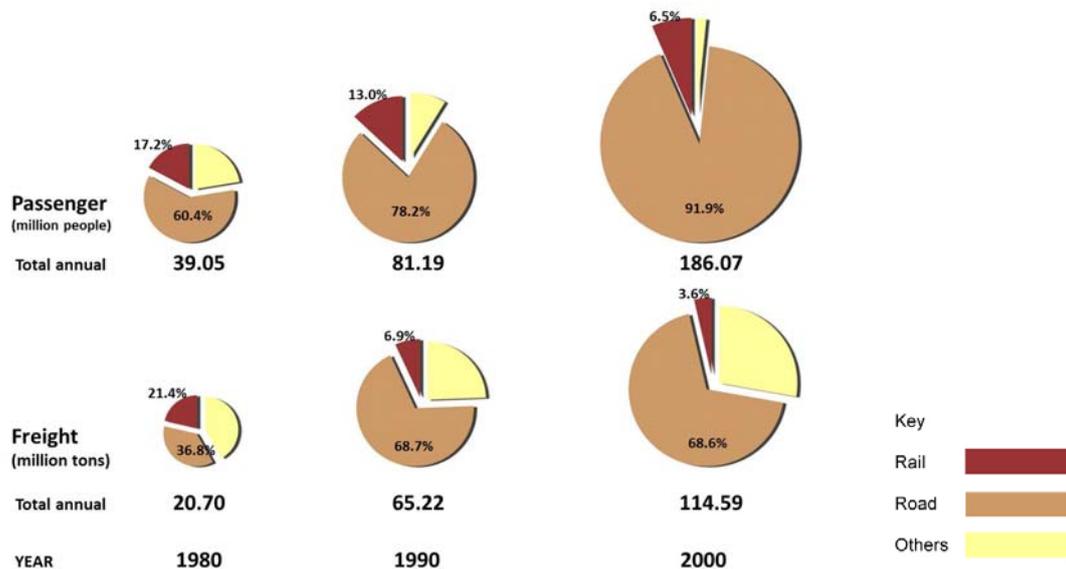


Figure 6: Total Annual Transformation Performance of Hangzhou between 1980 and 2000 (source: Hangzhou Statistics Bureau, 2012)

4.3 Analysis

Compared with the Communist industrialisation period, the economic reforms since 1980s triggered dramatic rise in urban mobility demands. However, the rail's strategies to connect cities at large scale make it disconnected with a big proportion of local urban residents, especially under the competition with road infrastructure.

On one side, the motorised urban transportation did not improve accessibilities of the rail station. Trains are less accessible with the fast expanding of urban footprint and population re-distribution. In Hangzhou, the reported average peak time vehicle speed on major metropolitan roads has been dropping down from about 26 km/h in 2006 (Yang, 2006) to about 15 km/h in 2013 (Hu, 2013). The half-hour vehicle accessibility radius to train stations shrunk into about 5 kilometres if considering reasonable parking time. Around the two currently operating stations, this radius covers about 110 square kilometres urban footprint, about 25% of Hangzhou's total urban footprint, and roughly 3% of the city's vast municipal area. For bus users, the half-hour travel radius is similar, as buses share most roads with vehicles. Due to the higher dwelling density in conventional centre, the population percentage covered by above radius is probably higher than 25%, but this will be declining in the long term along with the de-centralised population distribution trend.

On the other side, the use of vehicle transportation was stretching beyond local/regional scales, thanks to the large amount of new freeways between major and minor cities. In addition, the advantages of door-to-door travel convenience and ride comfort-abilities that trains were struggling to provide made road infrastructure able to challenge rails even at the inter-city scale transportations.

5.0 "Incorporation": A Fully Integrated Urban Life with Rail (Conclusion)

In 2010, the Huhang HSR was operating and connecting Shanghai and Hangzhou at 350km/h, which means the arrival of a "New HSR Era" in Hangzhou. The Hangzhou East

Station, built in 1992 as a complementary option to the Chengzhan Station, was upgraded into a giant terminal hub, standing among the largest of its scale in China, housing six HSR lines (including one Maglev Line) that connect to all domestic destinations. The new station is designed to serve 200,000 passengers daily. Around this terminal, a new town oriented at the predicted “HSR Economy” is proposed, covering an area of 9.3 square kilometres and accommodating 200,000 residents. This new town is centred around the HSR station physically and economically, and requires invention of new urban lives fully integrated with railway infrastructure.

The three studied periods present substantially different political and economic backgrounds to study the relationship between rail and urban development. It is however clear that the connectivity between rail and passengers dictates its role in urban life. The early years since 1900s saw urban prosperities fully powered by rails well connected with people from the widest range of background. However, this close integration disappeared during the following two periods. It is difficult to believe that this has happened in parallel with the soaring development of rail/train technologies from 20km/h steam engines in the 1900s to the 200km/h electronic locomotives a century later. If not considering the influence of policies between the 1950s and 1970s, a noticeable reason is that the higher the speed is, the less the train stops. Through improving speed, the trains are less accessible by people from remote and mid-way towns. It is even worse that within the expanding urbanities and fragile urban traffics, the stations are squeezed to peripherals in urban life, although they never moved away from the city centre.

With the arrival of new technologies that power trains at 350km/h, it is worthwhile to further discuss this disconnection. Certainly we cannot deny the progress of improvements in rail technologies, and in fact, we expect that the “HSR economy” as predicted will agglomerate urbanities from geographical distances.

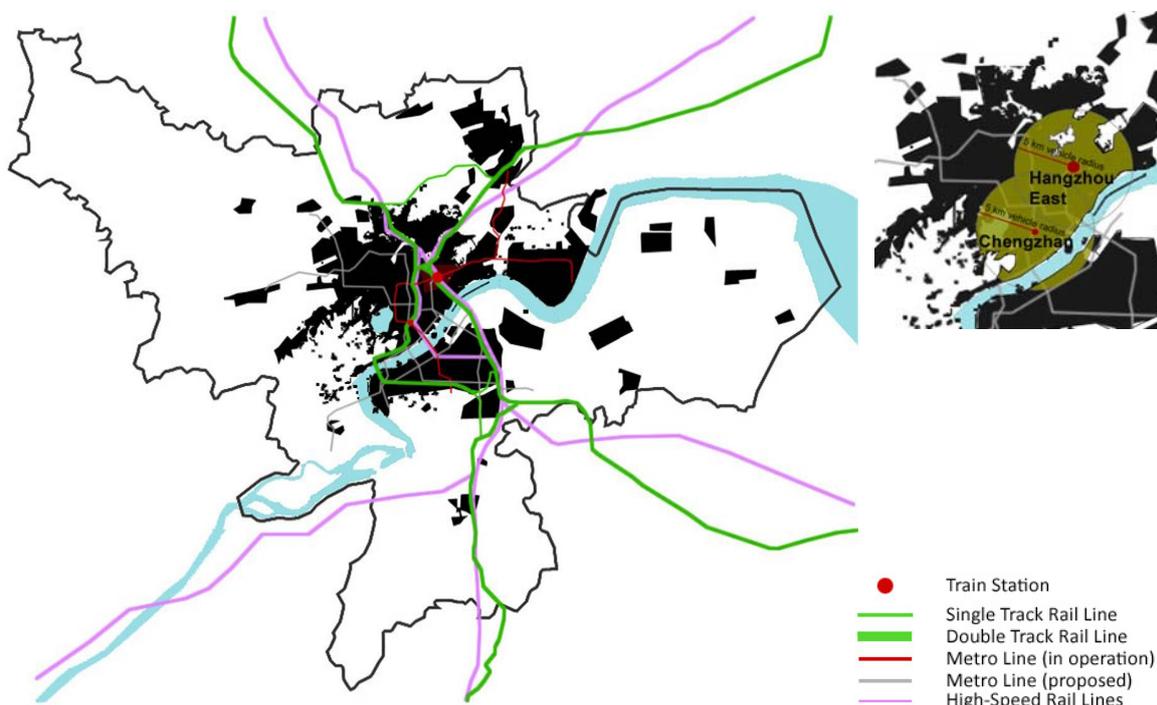


Figure 7: Proposed Hangzhou Rail Hierarchy in 2020 (left, source: Hangzhou Planning Bureau) and the half-hour vehicle accessibility circle overlapped with the urban footprint (top-right)

The missing part from a complete model for such an HSR-oriented urban life is the effective connectivity of the HSR that links with all scales of destinations, from local, regional to national, which includes rural and urban residents. This connectivity is provided by a complete hierarchy of the rail transportation system. The increased train speed and passenger capacity defines rail as a highly concentrated public transportation right, which cannot be dispersed immediately into private (vehicle) rights in the station area. A third level of transportation that bridges public/private rights should be introduced. This will help the HSR to extend its “roots” at the local/ regional scales that are now under the dominance of vehicles.

A second lesson to learn is for the urban functions around HSR station nodes. Within an urban hierarchy system structured by rail infrastructure, the urbanity around rail stations presents an interface of a city for dialogues with the rest. This trend is visible in the case of Hangzhou’s early year’s re-building of tourism industry, and is clearly reflected in the ISFH study where rail connected factories between cities to form a large scale “assembly line.” During the recent practice, as rail’s role faded in urban life, the station area developments were comparatively ambiguous.

Around the HSR infrastructures, as 3-5 hours’ commuting radius has dramatically increased from 150 kilometres in early years up to around 1,000 kilometres, it is predicable that new urban systems with never experienced sizes and complexities will appear. The planning around these stations will undoubtedly narrate the city’s position in the urban hierarchy. For the decision makers, it is important to realise how to avoid over flow of urban resources from lower level to higher level cities in the hierarchy. However, it is even vital that a city should be prepared to challenge itself with new urban identities, which is formed by its own characters and advantages, for future regional competitions.

Endnotes:

1. “Hukou” (dual residence registration): this system became effective in 1961, with the purpose of controlling rural residents immigrating into urban dwellings.

References:

- An, Rongquan (2011) “The Red Markings of Hangzhou Constructions in the Early Days of the New China”, *Hangzhou Construction*, Vol.33, No.3, pp.103-105
- Bian, Xiaodan (2008), “Hangzhou Had Its Own Clear ‘Identity’ in the Spring of 1983”, Hangzhou Daily Press Group, available from URL: http://hzdaily.hangzhou.com.cn/hzrb/html/2008-12/11/content_557298.htm (accessed 06 Mar 2012)
- Chen, Bailei (2008), “Influence of Hangzhou City Railway Hub on Urban Development”, *Urban Mass Transit*, no.6, pp.35-38
- Chen, C-L (2012), “Reshaping Chinese space-economy through high-speed trains: opportunities and challenges”, *Journal of Transport Geography*, vol.22, pp.312-316
- Ding, Xianyong (2005), “The New Transportation and Time in Life: With the Southern Part of Yangtze River in Modern Times for example”, *Historical Review*, no.4, pp.99-109
- Ding, Xianyong (2007), *New Transportation and Social Transformation: Taking Republican Zhejiang as the Centre*, Beijing: China Social Sciences Press
- Ding, Xianyong (2009), “Commentary on the Line Choice of the Hangzhou-Jiangshan Railway of the Republic of China”, *Zhejiang Social Sciences*, no.9, pp.77-82,127
- Dong, Fang (2011), “Great Leap Forward of Urban Constructions Along the High-Speed Rails”, *Consultative Forum*, no.7, pp.34-35
- Feng, Jian (2003), “Spatial-Temporal Evolution of Urban Morphology and Land Use Structure in Hangzhou”, *Acta Geographica Sinica*, Vol.58, No.3, pp.343-353
- Feng, Jian & Zhou, Yixing (2002), “Research on Population Spatial Variations and Suburbanisation of Hangzhou”, *City Planning Review*, vol.26, no.1, pp.58-65

- Fu, Chonglan (1985), *Development History of Canal Cities in China*, Chengdu: Sichuan People's Publishing House
- Han, Qitong (ed.) (1951), *Statistics of Inter City Trading of China (1936-1940)*, Beijing: China Academy of Science
- Hangzhou Archives (2006), *Collection of Hangzhou Ancient and Old Maps*, Hangzhou: Zhejiang Ancient Books Publishing House
- Hangzhou Municipal Government (1937), *Ten Years' Anniversary Commemorative Publication of Hangzhou Municipal Government (1927-1937)*
- Hangzhou Revolution Committee (1981), *Hangzhou Master Planning Interpretation 1981*
- Hangzhou Statistics Bureau (2012), *2012 Annual Statistics of Hangzhou*, Hangzhou Statistics Bureau, available from URL: <http://www.hzstats.gov.cn>, (accessed 30 MAR 2013)
- Hu, Yimin (ed.) (2013), *Does Limiting Vehicle Registration Work for Controlling the Traffic Jam? Zhejiang Will Discuss and "Listen to Suggestions" on 14 June*, Xinhua Net Zhejiang Channel, Available from:
http://www.zj.xinhuanet.com/newscenter/focus/2013-06/09/c_116103854.htm (accessed 01 Aug 2013)
- Luo, Yi (2005), *Research of the Function, Grade and Layout of Hangzhou's City Centre District*, Master Thesis, Hangzhou: Zhejiang University
- Ma, Shanshan (2008), *Development and City Image of Hangzhou in the Period of the Republic of China (1912~1937)*, Master Thesis, Changchun: Northeast Normal University
- Meisner, M (1977), *Mao's China: A History of the People's Republic*, New York: Free Press
- Ministry of Railway, Centre for Documentation and History (1999), *Fifty Years of New China's Rail (1949-1999)*, Beijing: China Railway Publishing House
- Qin, Chao (2012), "In Depth Research of Master Planning of Hangzhou Railway Hub", *Transportation Science & Technology*, Vol.251, No.2, pp.123-125
- Que, Weimin (1999), *Illustrated History of Hangzhou City and West Lake*, Hangzhou: Zhejiang People's Publishing House
- Simplified Hangzhou Traffic Map* (1971) Hangzhou: Zhejiang People's Publishing House
- State Council (2007), *Reply for Hangzhou Master Urban Planning from the State Council, State Letter (2007) No.19*
- Su, Quanyou (2011), "Another Side of Railway Effects in Modern China—Railway Impact in China to Inland Shipping in Early 20th Century", *Journal of Shijiazhuang Tiedao University (Social Science)*, vol.5, no.4, pp.82-86
- Tang, Hongqing (2009), "The Early Modernisation of Hangzhou City (1896-1927)", *Zhejiang Academic Journal*, no.6, pp.60-64
- Wang, Liping, (1999), "Tourism in Hangzhou and Space Change of the City (1911-1927)", in *Remaking the Chinese City: Modernity and National Identity, 1900-1950*, eds Joseph W. Esherick, Honolulu: University of Hawai'i Press, pp.107-120
- Yang, Hong; Lin, Yan (2006), "The Average Commuting Vehicle Speed in Hangzhou: 26.13 Km/h", *Qianjiang Evening News*, 2 September, 2006
- Yao, Yizhe (2011), *The Change of the Center of Hangzhou City from the View of the Land Exploitation of the Area of "New Market" during the Early Period of the Republic of China (1912-1937)*, Master Thesis, Hangzhou: Zhejiang University
- Yu, Jiajun (1985), "The Evolution and Urban Development of Hangzhou", *Geographical Research*, Vol.4, NO.3, pp.63
- Yu, Zhiming (ed.) (2005), *History of Hangzhou Branch Railway Bureau 1906-1995*, Beijing: China Railway Publishing House
- ZASMAG (Zhejiang Administration of Surveying Mapping and Geoinformation) (2011), *Collection of Zhejiang Ancient and Old Maps*, Beijing: SinoMaps Press
- Zhang, Jian (ed.) (1985), *History of Iron and Steel Factory of Hangzhou*, Hangzhou: Zhejiang People's Publishing House
- Zhong, Jianlei; Wang, Jianli & Lü, Yuxin (2013), "Analysis and Prediction of Vehicle Increasing Trend in Hangzhou - Based on GM (1.1) Grey Prediction Model", *Economic Research Guide*, no.1, pp.208-210
- Zhu, Hui (ed.) (2002), *History of Hangzhou Urban and Rural Construction Developments*, Beijing: Zhonghua Book Company

Greenway as a New Path for the Exploration of Urban-Rural Coordinate based on a Low-Carbon Model: A Case Study of Greenway Planning and Construction in Dongguan, Guangdong province (China)

Liangping Hong, Xiang Hua, Huazhong University of Science and Technology, China

1. Introduction

Since the beginning of the reform and opening-up policy, China's economic development has made remarkable achievements; however, the widening urban-rural gap has become important reasons leading to a lot of social and urban problems. How to achieve coordinate urban-rural development is an important problem China is required to face in terms of its future development. In general, urban-rural dual structure¹ is the fundamental reason why urban-rural gap is widening, which cannot be solved in one move; it still continues to exist in the near future even under the macro background of currently deepening structural reform. Therefore, when negatively expecting institutional innovation, actively seeking for an overall urban-rural development path which bypasses the current institutional barriers should be paid high attention to.

Coordinate urban-rural development does not indicate that rural development should follow the urban development mode, which is determined by different urban-rural resource endowment, and simple replication is inconsistent with objective development laws. On the one hand, most of cities in China adopt high-carbon development mode (Gu, C.L. et al., 2013), and replicating this mode in countryside will further increase the difficulties for our county to build a low-carbon society, and is inconsistent with global low-carbon development trend; on the other hand, such replication will lead to urban-rural homogenization phenomenon in terms of features and styles, and countryside's unique ecological characteristics, cultural characteristics and social characteristics will also disappear, which should be avoided obviously. Therefore, only actively exploring different urban-rural development paths under the low-carbon model should be the right choice.

As a hot research topic for Chinese planning scholars in recent years, the existing studies on coordinate urban-rural development problem mainly focus on the following three aspects: The first one is theoretical construction for coordinate urban-rural development plan, in which Zhao (2006) proposed that symbiosis theory, phased theory on industrial expansion and space growth and sustainable development theory are the theoretical basis for coordinate urban-rural development plan, Wang (2012) analyzed the complex relative relationship system on coordinate urban-rural development plan, proposed the basic concept of coordinate urban-rural development and built the theory of coordinate urban-rural development plan; the second one is comparative study for domestic and foreign coordinate urban-rural development cases, Zhang, et. al., (2009) summarized 7 suggestions by combing developed and developing countries' successful experiences in coordinate urban-rural development; the third one is the study on coordinate urban-rural development plan compilation and management, Zeng (2012) analyzed Chengdu's innovation in coordinate urban-rural development plan compilation and management, and pointed out that, close integration between compilation and management as well as multi-sector cooperation are the features for Chengdu's coordinate urban-rural development plan. Based on the existing studies, we may discover that, the study on coordinate urban-rural development combined with low-carbon concept is little, and the author thinks that low carbon is an important mean for human society to achieve sustainable development, while coordinate urban-rural

development is a core problem China must solve appropriately to achieve sustainable development; thus, the study on a combination of both has important practical significance and academic value, and it is necessary to conduct the corresponding research in the paper. In 2010, GPC, as one of implementation actions for Guangdong regional integration development strategy, was conducted very quickly in Guangdong province, which was designed to promote the urban-rural construction and improve the urbanization quality, and it also took the lead in exploring China's coordinate urban-rural development path based on the low-carbon model. The paper selects the case of GPC in Dongguan, Guangdong province as the object of empirical study, and will review the general situation of GPC in Dongguan, deeply analyze its management measures and implementation effects, summarize its successful experiences in promoting coordinate urban-rural development based on the low-carbon model, and finally discuss its limitation in promotion and potential problems.

2. Methods

2.1. Concept Definition

Many scholars at home and abroad define the greenway. For example, Guo (2003) put forward "the greenway usually goes along the natural corridors such as the water's edge, valley, ridge or railway and it can also be used for recreation or as the traffic road, landscape road, pedestrian crossing or bikeway. The open space that connects the park, nature protection area, cultural features, historical site, densely inhabited district and regional long and narrow or linear park is usually designed as the greenbelt or aesthetic road". This definition basically includes the key points concerned by all scholars. The research finds that it can clarify the connotation of greenway. And I agree and accept this definition.

2.2. Research Emphasis

Since the term of greenway was first created and used by William H. White in his monograph *Protect the Open Space of American Cities* published in 1959 (Little, C.E. 1990), it has been widely and deeply researched by scholars around the world for over 50 years. Their research focuses on environmental protection, historical and cultural heritage corridors travel and leisure development, green infrastructure and so on (Dai and Hu, 2013). The paper is different from the past research and puts emphasis on two aspects: First, how does the greenway affect the method of daily traveling of urban and rural residents in Dongguan to be low carbon as it is introduced into Guangdong of China as a new object that is beneficial to the common people? Second, how does the greenway play a part in promoting coordinating urban and rural development in Dongguan on the basis of satisfying the primary need in a popular style with the characteristic of low carbon? The two aspects include how does the specific policy of greenway avoid the current institutional barrier of city-countryside dualization, how to realize urban and rural green space integrated construction in Dongguan with the help of greenway and how does the rural tourism initiated by greenway promote the rural economy to develop in low carbon mode and promote the differentiation development with urban and rural characteristics, etc.

2.3. Study Area

Dongguan is located in southern Guangdong, at the east coast of Pearl River Estuary, bordered by Huizhou in the east, Shenzhen in the south, Guangzhou in the west and Zengcheng in the north. The city covers 2,465 square kilometers in total, with about 8,500,000 permanent residents in 2011. The weather in Dongguan bears a subtropical monsoon climate, with an annual average temperature of 22.7°C and annual average rainfall of 1,879mm over the period of 2002 to 2011 (Dongguan Municipal Bureau of Statistics & Survey Office of the National Bureau of Statistics in Dongguan, 2012); such comfortable climate creates conditions for residents to travel outside. Meanwhile, Dongguan has mountains in the southeast, waterfronts in the northwest, and rivers scattering in the middle,

which also provides a good foundation for building urban-rural green space with rich types and distinct characteristics.

2.4. Overviews of GPC

- *Overall objective*

The objective is, by investing about RMB 3 billion over the period from 2011 to 2014, to construct Dongguan greenway with 2263 kilometers (including regional greenway of about 225 kilometers, urban greenway of about 781 kilometers, and community greenway of about 1257 kilometers), achieve greenway network density of 0.9 kilometer/square kilometer, establish Dongguan 10-minute greenway riding cycle, build Dongguan greenway network system with regional, urban and community greenways linking closely and functioning reasonable, and build Dongguan greenway network into a people project with ecological, social, economic and cultural functions.

- *Overall Layout*

The greenways in Dongguan are classified into three categories, i.e. regional greenway, urban greenway and community greenway. There are three greenways passing through Pearl River Delta and 21 neighborhoods in Dongguan, with about 225 kilometers in total, which constitutes the framework (Figure 1) of greenway network in Dongguan, along with 26 service stations to serve about 4 million people; urban greenways are classified into five regions of “central part, Putian part, mountain forest, water village and coastal area”, covering 32 towns in Dongguan, with a length of 781 kilometers, forming Dongguan greenway network (Figure 1), connecting major natural and human resources points in Dongguan, along with about 173 interest points; community greenways, about 1257 kilometers, connect community parks, small gardens and roadside green space, provide residents with convenient greenways in slow traffic system, and are cell and micro-circulation tissue for greenway network.

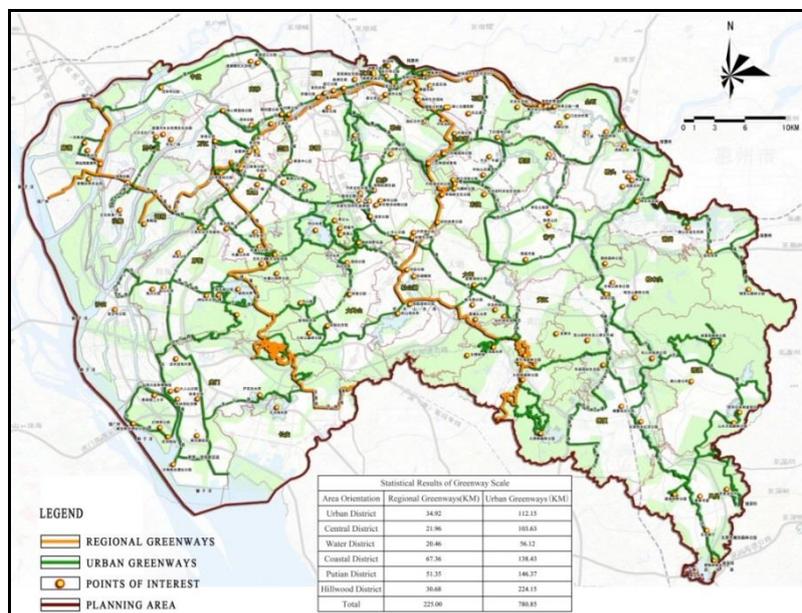


Figure 1: Dongguan Greenway Overall Layout
 (Source: The Comprehensive Planning of Greenway in Dongguan (2010-2020))

- *Construction Achievements*

Through more than two years’ construction, Dongguan greenway network has achieved initial success. By the end of 2012, Dongguan has constructed greenways with a length of 1148 kilometers in total, including having been built regional greenways of 225 kilometers, constructing 26 regional service area, and connecting over 200 tourist attractions and interest points along the way; urban and community greenways of accumulative 923

kilometers have been built, and 61 urban and community service area have been built (Figure 2).



Figure 2: Dongguan Greenway Service Area, Identifying & Landscape
(Source: Authors)

2.5. Analyses on Management Measures

Dongguan's management measures on GPC are designed to not only effectively promote the construction work, but also facilitate the management maintenance after the construction, and the measures include the following aspects.

- *Organization*

A team especially for Dongguan greenway network construction is established, consisting of Dongguan's relevant leaders as well as the principals of more than 20 relevant functional departments, such as development and reform bureau, finance bureau, land resources bureau and urban and rural planning bureau, to be responsible for Dongguan's overall arrangement on greenway network construction. An office is under the team, set up in Dongguan's urban and rural planning bureau, and is responsible for comprehensively coordinating and guiding the greenway network construction. The relevant functional departments, on the one hand, attach great importance to performing their own duties, on the other hand, try to simplify the procedures and improve the efficiency within the scope permitted by the policy, to ensure the effective promotion of greenway network construction.

- *Land for Project*

The land for greenway construction project is provided by each section, renting or acquiring land can be adopted not to change the ownership and property of the original land. To reduce the demolition, the land for greenway's trail, station and interchange station may be combined with farmland, water conservation, tourism and ecological land, and the construction land index would not be occupied in principle.

- *Financing*

City- and town-level greenway construction special funds are established through city- and town-level annual budgets. The construction capital for regional greenway is provided by city-level finance bureau, land demolition expenses, pipeline transfer expense, bridge construction and earthwork expenses occurred for urban greenways and community greenways in each town are provided by each town, while the project construction capital (including slow road, greening, sign system, water and electricity, station) is shared by city-level finance bureau and town-level finance bureau in accordance with 50%:50%. If the greenway in each town satisfies certain conditions and standards, city-level finance bureau will give back greenway construction subsidy.

- *Operation Management*

Dongguan urban comprehensive administration is responsible for formulating the uniform operation management standards for greenways (including regional greenway, urban greenway and community greenway) in Dongguan jurisdictions. Dongguan urban

comprehensive administration is responsible for managing the operation of greenways at each level within the road scope uniformly managed by Dongguan urban comprehensive administration, and the expenses are arranged by city-level finance bureau. The operation of the greenways at each level in other regions is managed by each region, and the expenses are arranged by town-level finance bureau.

2.6. Analyses on Implementation Effect

By the end of 2012, a professional research company has conducted an evaluation on Dongguan’s constructed greenways that the public participates in, applied questionnaire survey (about 9000 effective questionnaires), depth interview (more than 30 greenway users), enterprise merchant investigation (150 related merchants), network consensus combing (about 300 network reports), field observation (1 hour each for three times every day in 12 typical places) and network survey (more than 6600 netizens participating in), and made a comprehensive and deep summary about Dongguan greenway’s service efficiency, and completed the following analysis based on the data from the evaluation.

- *Service Efficiency and Purposes of Greenway*

In the investigation and evaluation, 80% of respondents know Dongguan greenway, 70% of respondents have used Dongguan greenway. Greenway’s usage frequency is closely related to the greenway’s construction level and location, the usage rate of the greenway located at place of residence nearby and tourism scenic spot is obviously higher than that in other regions (Figure 3), meanwhile, the recreation & entertainment, fitness and family activities are in the front rank (Figure 4) in the investigation in terms of the greenway’s intended use. Considering that such activities are basically conducted in holidays, still 30% of the respondents often or every day use the greenway to implement such activities, which indicates that greenway has been incorporated into the life of residents in Dongguan. In addition, besides using the greenway in the life, 11.6% of the respondents select greenway as the transportation means for commuting, while 64.1% of such respondents often or every day use the greenway (Table 1).

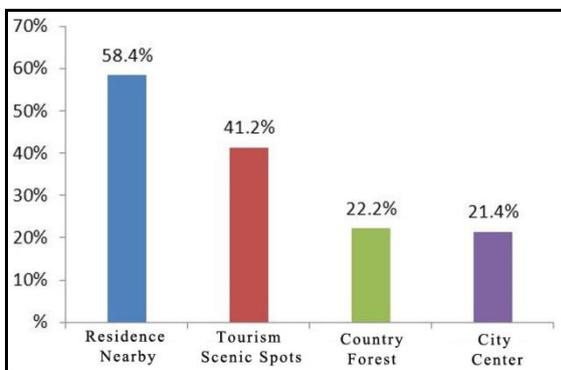


Figure 3: Service Efficiency of Different Regional Greenway
 (Source: Dongguan Greenway Comprehensive Evaluation Report, 2012)

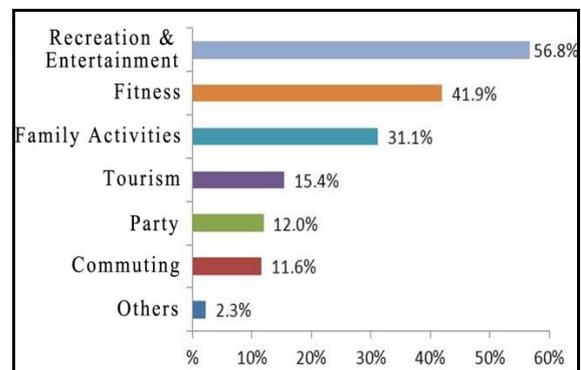


Figure 4: Rank of Intended Use of Greenway
 (Source: Dongguan Greenway Comprehensive Evaluation Report, 2012)

Purpose	Frequency	Almost Every Day	Often	Sometimes	Seldom
Recreation & Entertainment		5.2%	19.3%	57.9%	17.6%
Fitness		5.6%	24.0%	56.3%	14.2%
Family Activities		4.0%	21.1%	60.4%	14.5%
Tourism		4.9%	24.1%	53.8%	17.2%
Party		9.9%	27.4%	48.3%	14.4%
Commuting		30.8%	33.3%	27.5%	8.4%
Others		7.0%	14.8%	39.1%	39.1%

Table 1: Greenway Service Efficiency Based on Different Purposes
 (Source: Dongguan Greenway Comprehensive Evaluation Report, 2012)

• *Social Economic Benefits of Greenway*

After the greenway in Dongguan is put into use, the greenway has produced sound social benefits (Figure 5). Firstly, more than 90% of the respondents think that, the ecological environment surrounding greenways has been improved than before; secondly, the greenway has become an important place for Dongguan residents to communicate and interact, more than 75% of the greenway users often come to the greenway to play with their family members during the holidays, nearly 75% of the respondents think they are healthier than before after using the greenway, more than 85% of the respondents think they feel more comfortable than before after using the greenway. Therefore, the greenway has also been affirmed by the residents in Dongguan, nearly 60% of the greenway users are satisfied with the greenway, especially the greenway’s environment comfort level, scenery along the way, construction quality and convenience.

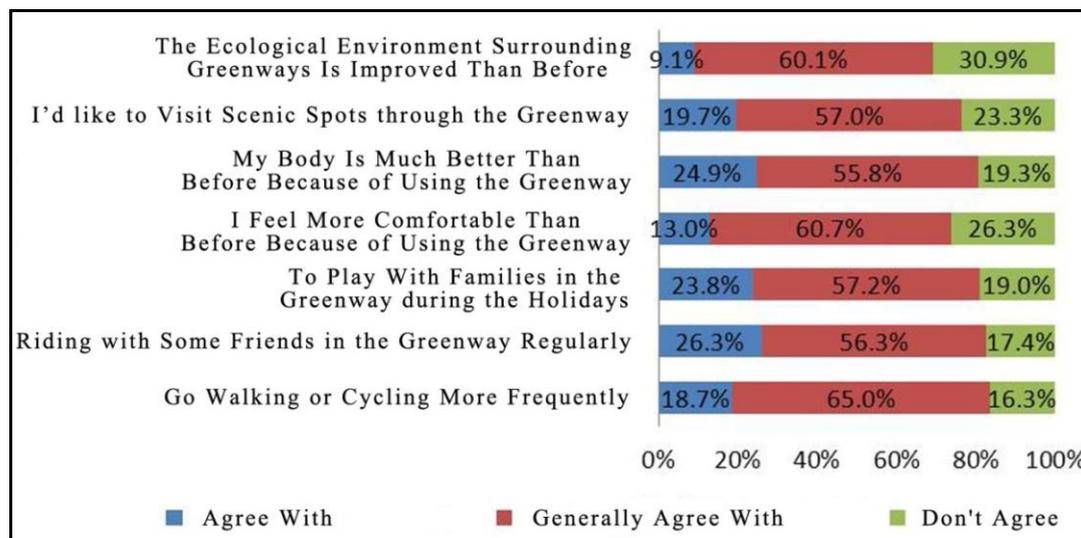


Figure 5: Greenway’s Impact on Residents in Dongguan
 (Source: Dongguan Greenway Comprehensive Evaluation Report, 2012)

In terms of the economic benefits, the greenway also performs well. In the depth interview and questionnaire survey with enterprises, such as restaurants, convenience stores and bicycle sales and rental along the greenway, more than 60% of the enterprises think that, the greenway has increased the passenger flow volume and turnover. Currently, the greenway exerts the biggest impact on bicycle sales and rental, including the following two aspects: One is an increase in the number of branded bike stores; Dongguan’s branded bike stores are increased from 42 in 2009 to 99 in 2012, forming a fierce competition pattern (Figure 6) since different brand stores densely open in the same district; the other is to promote the sales of the bikes. Take Mérida bicycle that captures 50% of the upscale bicycle market as an example, the annual sales increase from 5000 bikes in 2010 to 10000 bikes in both 2011

and 2012, and the accumulative sales amount exceeds RMB 60,000,000 during the past 3 years in accordance with the average market price of RMB 2,500 per bike. The sales volume of ordinary bicycles is also amazing; the sales volume of ordinary bicycles is 1,000,000 in 2011 and the sales amount exceeds RMB 500,000,000 in accordance with the average market price of RMB 500 per bike. It is expected that, as the greenway's supporting facilities are further constructed and improved, the greenway will comprehensively enhance the economic benefits of the related industries, such as restaurants and convenience stores, and provide a lot of jobs for society, and further enhance the social benefits.

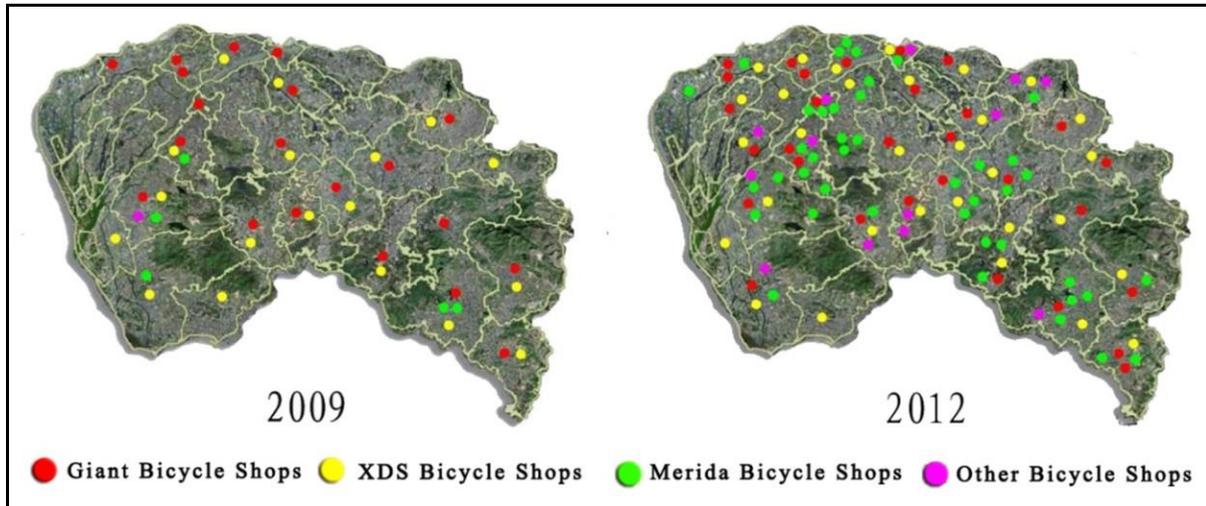


Figure 6: Dongguan Branded Bicycle Stores Layout in 2009 and 2010
(Source: Dongguan Greenway Comprehensive Evaluation Report, 2012)

3. Results

3.1 Contributions of Promoting Low-Carbon Travel

Since 2007, transportation has become the industry in China with the fastest consumption growth in the energy especially the oil, and the vehicle fuel consumed by vehicles on the road account for almost 70% of the total energy consumption of the transportation industry (Compile Committee of the Second National Assessment Report on Climate Change, 2011). A surge in private motorized vehicles is the primary reason why transportation energy consumption stays at a high level, and this problem is particularly prominent in Dongguan. In accordance with data from Dongguan statistical yearbook, over the period from 2001 to the end of 2011, Dongguan civilian vehicle ownership increases sharply from 183,600 to 1,061,400 by almost 6 times, including civilian passenger car ownership increases sharply from 89,700 to 906,500 by almost 10 times, and amazing automobile exhaust emissions and increasingly crowded traffic condition also appear. Therefore, low-carbon travel should become one of necessary means for Dongguan to achieve sustainable development in the future.

The current international main stream believes that a low carbon trip refers to travel on foot or by bike or other public transport means and the Factors of Energy Consumption of Each Transport Mode (Table 2) shows that pedestrian and travel by bike are absolutely the greenest transport modes. Though travel with public transport means should be the first choice to develop low carbon traffic as for transportation demand in modern city, to travel on foot and by bike should still be the most low carbon travel modes and be widely promoted, and the planning and construction of greenway offers a good spatial carrier for it. We can easily find from the analysis from the above text that the residents in Dongguan have widely adopted traveling in the greenway as a method of relaxation and body-building. It is thus clear that the planning and construction of greenway offers a simple and easy way for the

low carbon trip of Dongguan residents that is closely connected with life. It also provides an opportunity to let people gradually accept and pursue the idea of low carbon trip, which creates a good beginning for the change of trip mode of Dongguan residents to be more low carbon.

Transport Mode	Rail Transit	Bus	Motorcycle	Private Car	Taxi	Bicycle	Pedestrian
Energy Consumption (MJ / person-kilometer)	0.322	0.714	1.495	2.795	5.59	0	0

Table 2: Factors of Energy Consumption of Each Transport Mode

(Source: Lv, SH., Tian, F., Li, X.H. (2007) *Study on the Optimized Model of Urban Passenger Traffic Structure, Journal of Highway and Transportation Research and Development, Vol.24, No.7, pp.117-118.*)

3.2 Contributions of Promoting Urban-Rural Coordinate Development

- *Bypass Institutional Barrier*

China's urban-rural dual structure mainly reflects in urban and rural different management systems in land, population, industry, environment and public services, and land system is the core of so many problems. The urban land right is owned by the state, and is able to become capital by transferring the land use right in the land market, while rural land is owned by the collective, however, the village collective has no right to buy and sell it, which can only be purchased by the government; the government can obtain huge land capital gains by purchasing low and selling high, while the village collective cannot share such capital gains, which leads to a series of problems of urban-rural social conflicts and livelihood and social security of land-lost farmers. Therefore, the reform and innovation of the land system is the key to solve the coordinate urban-rural development dilemma, and cannot be solved overnight.

The land for greenways at all levels in Dongguan includes both urban state-owned land and rural collective land. If in accordance with the traditional management methods, the procedures on land acquisition and nature conversion are required before conducting the construction, and the dilemma incurred by the institutional barriers must replay, and the GPC may also be affected. However, Dongguan's GPC has relatively successfully avoided the dilemma, and the key is that the land for greenway construction project does not change the ownership and property of the original land, all the greenway land involved in the collective land are solved by rental, villagers are encouraged and guided to develop happy farmhouse along the greenway, share the benefits brought by the greenway construction, and largely arouse the enthusiasm of villagers to participate in and jointly promote the smooth development of Dongguan's greenway construction.

- *Promotion of Green Infrastructure Integration Construction*

In the traditional urban-rural dual management system, all urban green spaces and rural mountains, fields and rivers belong to different management systems and lack of coordinate operation platform and spatial paths, therefore, they exhibit relatively segmented cracked plaques in the spatial distribution, while overall layout and orderly development of urban-rural space should be based on sound networking green ecological foundation, which is also beneficial to deal with the increasingly remarkable climate change. Therefore, promoting urban-rural integration of green infrastructureⁱⁱ is a very important content in China's coordinate urban-rural development. It is required to incorporate building greening, roadside green space, park, scenic spot and green corridor into overall urban-rural structure on different scales to form greening ecological network (Zhou, L et. al., 2010), and the greenway is undoubtedly able to become the most effective way to achieve the objective.

The Dongguan City greenway planning takes coordinating the city green space as the basic goal at the beginning of the design and takes the integration of resource factors as the

important basis for deciding the route selection of greenway (Table 3). The planning analyzes all kinds of elements such as the natural ecology, historical humanism, urban traffic and cities and towns spatial arrangement to integrate all kinds of green spaces through the route selection of greenway as far as possible.

Type of Element	Content of Element	Specific Influence
Element of Natural Ecology	Places of interest, forest parks, nature protection areas, rivers and waterways, reservoirs, island, farming and sericulture fields and gardens, etc.	Guarantee the rational utilization of superior ecological bases; express the ecology landscape characteristics of different areas; and connect ecological resources.
Element of Historical Humanism	Historical remains, villages and traditional streets, etc.	Connect the human resources in various regions; enrich the connotation of greenway; and demonstrate the splendid culture of Lingnan.
Element of Urban Traffic	Traffic line network and traffic facilities such as the railway, motorway, expressway and arterial street	Demonstrate the urban construction characteristic of Dongguan; form multiple, convenient and fast transfer system and improve the accessibility of greenway.
Element of Spatial Arrangement of Cities and Towns	Current overall arrangement and the isolating greenbelt of the cities and towns	Improve the usage rate of greenway; control the disordered extension of city; and optimize the space environment of the cities and towns.

Table 3: Influence of Resource Factors to the Route Selection of Greenway in Dongguan (Source: Overall Planning of Greenway in Dongguan (2010-2020))

In accordance with Dongguan’s greenway planning, the ecological greenway constructed along the natural river, valley, coast and ridge line outside the city, relies on the open green space, water, coast and field surrounding the city’s built-up area to build suburban greenway, and relies on the human scenic spot, park square and green space on both sides of city roads to build urban greenway, both of which jointly constitute the linear green space network, and connect Dongguan’s 18 forest parks, 5 natural protection areas, 24 stream channels, 56 reservoirs, 5 islands, 14 fields and gardens as well as major parks and roadside green spaces in 32 towns, which integrates the green infrastructure within the city scope into a whole on the spatial layout. Meanwhile, due to that the existence of greenway construction work team and its office largely guarantees the orderly construction and effective management of the greenway, both the operation platform and spatial path effectively promote the integration construction of green infrastructure in Dongguan.

- *Promote Urban-rural Characteristic Differentiated Development by Pushing Rural Economic Development in a Low-Carbon Mode*

Under China’s traditional urbanizationⁱⁱⁱ model, the government development concept of “taking city as the core” reflects in favorable policy, capital and human resources concentrating on cities, which leads to the current prosperity of Chinese cities. By contrast, the countryside is underdeveloped, backward rural economy characterized by low-efficiency development of agricultural industry leads to farmers’ low income and lagging rural construction. And the chain reaction incurred is that, on the one hand, a lot of rural idle labor enters the city to work but is unable to enjoy fair treatment due to the existence of social dual structure, which incurs all kinds of social problems; on the other hand, the countryside’s original features disappear when pursuing the economic development by replicating the currently urban high-carbon mode, and what disappears includes not only low-carbon and ecology, but also the countryside’s unique social culture and landscape, which obviously is inconsistent with the ultimate goal of achieving sustainable development. Therefore, coordinate urban-rural development should not only break down the urban-rural dual structure barriers, but also select appropriate development mode combined with the countryside’s own characteristics, to avoid losing itself due to blindly replicating the urban

mode. From the perspective of reality, establishing low-carbon and ecological rural mode as well as preserving and developing material and non-material features should take developing rural economy and improving farmers' life level as the preconditions, while Dongguan's greenway, as a new path for coordinate urban-rural development, also makes good achievements in this aspect.

Dongguan greenway connects the major forest parks, natural protection areas, scenic spots and historical sites as well as human resources in the city; based on that, by combining tourist route setting and ecological agricultural sightseeing, combining greenway service area and happy farmhouse, travel and leisure will become a new growth point for rural economic development, which not only improves the economic efficiency of agricultural resources, but also extends and develops the countryside's production and life characteristics, and enhances the farmers' income. It is absolutely the right development pattern that suits the characteristic of the country in comparison with copying the high-carbon development pattern of the city and developing the process and manufacturing industry blindly. Considering that Dongguan's greenway construction begins to take shape, and it is difficult to obtain the data on the countryside's economic benefits along the way, the author uses the data on the contribution of greenway in Guangdong greenway pilot city - Zengcheng to the rural economy to verify the above analysis. Since constructing the greenway, Zengcheng's tourists and tourist income increase largely, only in 2012, it attracts greenway tourists of 526,100, driving the whole city's accumulative tourists of 17,640,000, achieving tourist income of RMB 4,580,000,000 (Chen, W.X. 2013), providing 1000 direct jobs and 3000 indirect jobs; the rural collective economy along the greenway develops faster than the countryside not along the greenway, the rural per-capita cash income is about RMB 10,000, increasing by 17%, and the greenway's contribution to increasing farmers' income is about 40% (Xiong, X.L. 2011). Dongguan, as a neighbor of Zengcheng, ranks first in Guangdong province in terms of per-capita disposable income, far exceeding Zengcheng, and theoretically have stronger economic consumption ability and more travel and leisure demand, therefore, Dongguan greenway will play a gradually prominent role in pushing rural economy along the greenway as the greenway is completed and improved.

4. Conclusions

4.1. Beneficial Exploration

Greenway, as a special channel for people's fitness and leisure, is able to provide a new idea on exploration of Chinese urban-rural coordinate, after thorough planning and construction as well as formulation of new management mode. Based on the above analysis, it is found that, Dongguan greenway connects the city's important natural and human resources points by selecting reasonable and careful routes, and is planned to push the coordinate urban-rural economy development, and management measures characterized by city and countryside integration as well as multi-sector cooperation have been formulated to ensure the smooth implementation of planning and construction, and Dongguan has made a bold attempt in promoting Dongguan residents to transform into low-carbon travel mode, implementing integrated construction for green infrastructure, developing urban-rural economy, protecting rural characteristics and bypassing institutional barriers, and has made remarkable achievements, and achieved beneficial exploration on a new path for Chinese urban-rural coordinate under low-carbon model.

4.2. Limitation of Dongguan's Experiences Promotion

Urban-rural coordinate is an exploration work, and the key to achieve it is, based on an overall scientific analysis of urban-rural difference and regional difference, to formulate appropriate policy guidance in accordance with the local conditions (Wang, G.T. 2012), and the success of Dongguan GPC in promoting urban-rural coordinate also comes from it. Dongguan greenway's successful experiences mainly reflect in two aspects, one is having

bypassed urban-rural dual land management system barrier, the other is pushing urban-rural coordinate by tourism and leisure, both of them are closely related to Dongguan's urbanization development stage and economic development level, which are also the limitations of Dongguan's experiences promotion by other regions in China.

Dongguan greenway construction bypassing urban-rural dual land management system barrier is mainly attributed to that all the greenway land involved in the collective land adopt rental method instead of land acquisition, and such choice has its underlying reasons. Due to the city's rapid development in the past 30 years, in 2006, Dongguan's built-up area accounted for 43% of the city's total area; on the premise of satisfying the requirements of ecological baseline, newly increased land resources are very limited, and limited land indicators are often used for the city's projects on investment attraction; even if the government is willing to provide the greenway with construction land indicator by converting the collective land, the cost is not low due to the strength of village collective economy. Thus, rental naturally becomes the best plan for the government a village collective to reach an agreement. While in China's other regions, especially the middle and western regions where urbanization level is relatively low and the rural economy development lags behind, there is a lower probability that the government adopts land rental since the construction land is relatively sufficient and the land transaction cost is low, which is why it is difficult to use Dongguan greenway experiences for reference.

Pushing urban-rural economic development by tourism and leisure require preconditions. Only when per capita income reaches or exceeds certain standards, people will begin to carefully consider participating in tourism and leisure activities and are able to achieve them. On the contrary, even if people have leisure time, they will use it to consider increasing income instead of consumption. It is the widely-held view in the international community that, per capita GDP exceeding USD 3000 is the basic standard to enter the leisure era, while Dongguan has met such standard in 2004, and Dongguan per capita GDP was USD 7847 in 2008, satisfying the standards for upper-middle income countries. Therefore, Dongguan residents are able to accept the greenway so quickly, and actively conduct tourism and leisure activities via it. Other cities in China that want to take example by the successful experience should be comprehensively assessed. The use of greenway will not be affected by the difference of regional economic development levels and difference of rich and poor residents as for the urban and rural residents' daily life and working trip, but the difference of economic development stages should be put with enough emphasis on if you hope the leisure tourism industry initiated by the greenway drives the urban and rural economies.

4.3. Potential Problems That Need to be concerned

- *Double-faced Influence to Regional Culture in the Country*

We've mentioned about the influence of greenway on the development of rural economy and promoting of urban and rural characteristic differentiation development. The essence of promoting the rural tourism industry with greenway as the supporter is to utilize the mutual affinity of different culture groups. The connotation that the characteristic of country is different from that of the city is also their cultural difference. Therefore, keeping the regional cultural characteristic of country is an important problem that needs to be emphasized and stressed in the future development of country.

From the dialectical standpoint, every coin has two sides. That also fits the influence of greenway to the regional culture of the country. The core of maintaining and inheriting any culture is people. The backward rural economy causes quite a number of rural populations, especially the young people who leave the country for work, which results in the hollowing out of large quantities of countries and the cultural fault in the development of rural regional culture. The planning and construction of greenway drives the rural tourism and brings new opportunities for the villagers to get job and become rich, which contributes to eliminating the phenomenon of hollowing out in the country to some extent. And the industrial characteristic

that it consumes rural regional culture also stimulates the renaissance and development of rural regional culture. As for the negative effects, the construction of greenway also offers a more convenient way and a more popularized platform for the contact of urban culture and rural culture. The conventional thinking in current China that “the city is more advanced while the country falls behind” and great potential difference of the two cultures causes the phenomena that the urban tourists despise rural culture and the villagers cater to the urban tourists, which will destroy the rural regional cultural connotation invisibly.

- *Possibility of Disorder Expansion of Town and Country Construction*

The adverse impacts of blind and disorder expansion of urban construction have gradually acknowledged by Chinese governments who have made corresponding management policies to control the expansion of cities. The greenways are the routes to provide relaxation, body-building and travel for the public. Though we can make strict construction and development system to avoid the spread of city boundary, the construction and improper activity of the greenway user may cause negative effects to the initial conditions of the urban and rural environment. Therefore, it is necessary to carry out comprehensive influence tracking assessment on greenway to find out the adverse impacts and make adjustment measures for effective control.

As for the construction of the country, as the greenway can effectively drive the development of rural tourist economy, it may cause profit-driven overdevelopment and disordered construction, which waste the rural resources and have negative influence on rural culture and profile control. We need to take comprehensive management measures after deep research to control the possible adverse impacts.

Acknowledgments

I express my sincere thanks to Dongguan Urban-Rural Planning Bureau and Dongguan Urban Planning & Construction Institute for their providing the paper with detailed basic materials, such as Dongguan comprehensive Planning on Greenway (2010-2020) and Dongguan Greenway Comprehensive Evaluation Report 2012.

Endnotes

ⁱ American economist Lewis W.A. proposed in 1954 that, the economy of the developing countries consisted of modern economic departments characterized by modern technology and traditional agricultural sector characterized by traditional backward technology, and the co-existence of such two departments is called as dual economy or dual structure. The dual economic theory has been quickly responded by Chinese academic society after being proposed. In 1988, the experts from the center for policy research of Ministry of Agriculture proposed Chinese dual social structure theory (Zeng, Y. 2012).

ⁱⁱ In 1999, a joint working team established by American Conservation Foundation and Forest Service of Ministry of Agriculture clearly proposed the concept of green infrastructure for the first time, defining it as national natural life support system, an interconnected network made up of water channel, wetland, forest, wildlife habitat and other wilderness and open space maintaining original species, promoting natural ecological process, protecting resources and improving people’s life quality (Zhang, Q.M. 2004).

ⁱⁱⁱ Chinese traditional urbanization refers to the urbanization road under the specific historical background since China’s reform and opening up, with the fundamental characteristics of labor non-agriculturalization taking city as the core and taking growth as orientation (Ye, Y.M. 2013).

References

- COMPILE COMMITTEE OF THE SECOND NATIONAL ASSESSMENT REPORT ON CLIMATE CHANGE (2011) *The Second National Assessment Report on Climate Change*, Beijing: Science Press.
- CHEN, W.X. (2013) *Zengcheng: Greenway Brings Benefits to the Village*, viewed 22 June 2013, <<http://news.ijjnews.com/system/2013/04/06/010063984.shtml>>.
- DAI, F., HU, J.SH. (2013) *Study on the Theory of Urban Greenways and its Planning*, China Building Industry Press, Beijing.
- DONGGUAN MUNICIPAL BUREAU OF STATISTICS & SURVEY OFFICE OF THE NATIONAL BUREAU OF STATISTICS IN DONGGUAN (2012) *Dongguan Statistical Yearbook 2012*, Beijing: China Statistics Press.
- GU, C.L., TAN, Z.B., LIU, W., YU, B.Y., YU, Y.B., YANG, B.J. & HAN, C.Q. (2013) *Climate Change and Low-Carbon City Planning*, Nanjing: Southeast University Press.
- GUO, Q.Y. (2003) *Green and Blue Network: The Theory and Practice of Sustainable Landscape Planning*, Chan's Arch-Publishing CO., LTD, Taipei.
- LITTLE, C.E. (1990) *Greenway for American*, M.D. John Hopkins University, Baltimore.
- LV, SH., TIAN, F., LI, X.H. (2007) Study on the Optimized Model of Urban Passenger Traffic Structure, *Journal of Highway and Transportation Research and Development*, Vol.24, No.7, pp. 117—118.
- WANG, G.T. (2012) Urban-Rural Integration Planning Should Begin with Understanding Chinese Situation: a Discussion about Urbanization with Chinese Characteristics, *City Planning Review*, Vol.36, No.1 (January), pp. 9—12.
- WANG, H.Y. (2012) Building a Scientific Theory on Urban-rural Integration and the Chinese Model of Urbanization, *Urban Planning International*, Vol.27, No.4, pp.77—88.
- XIONG, X.L. (2011) *Greenway in Guangdong Province Exploit New Idea of Urban Development*, viewed 22 June 2013, <http://news.timedg.com/2011-10/14/content_6708200.htm>.
- YE, Y.M. (2013) Systematic Framework and Practical Approach for Coordinated Urban-Rural Development in China, *Urban Planning Forum*, No.1 (206 in total), pp.1—9.
- ZHOU, L., ZHANG, J. X., CUI, S. P., YU, C., XIAO, Y. & FU, W. (2010) *Eco-city Planning and Construction in Low-carbon Era*, Beijing: China Building Industry Press.
- ZHANG, Q.M. (2004) Green Infrastructure, *Land and Resources Information*, No.7, pp.35—38.
- ZHANG, Q., LUO, Q.Y., LIU, L.F. (2009) Modus Operandi and Experience of Foreign Countries in City and Town Development as a Whole Body, *Chinese Journal of Agricultural Resources and Regional Planning*, Vol.31, No.2 (April), pp.76—80.
- ZENG, Y. (2012) Thirty Percent Compilation and Seventy Percent Administration: Urban-Rural Integration Planning of Chengdu, *City Planning Review*, Vol.36, No.1 (January), pp.80—85.
- ZHAO, Y.L. (2006) The Theory and Content of Urban-Rural Planning, *Urban Planning Forum*, No.1 (161 in total), pp.32—38.

Sustainable Transport in Germany and the US: A comparison of the Washington, DC and Stuttgart Regions

Wolfgang JUNG
Institute of Urban and Regional Planning
Karlsruhe Institute of Technology (KIT)
Germany

Ralph BUEHLER
Virginia Tech, Urban Affairs and Planning
School of Public and International Affairs
United States

1. Introduction

Federal, state, and local governments in Germany and the U.S. strive to make passenger transport more sustainable. In this paper, we first compare the Washington, DC and Stuttgart regions to demonstrate differences and similarities of the German and US systems of land-use and transport planning. To illustrate local planning for more sustainable transport we compare planning in Arlington County in the DC Metro region and Scharnhäuser Park in the Stuttgart region—both localities are best practice examples for sustainable planning. We conclude that in spite of significant differences in motorization, travel behavior, sustainability, and planning systems, local governments in both countries rely on similar strategies to increase the sustainability of their transport systems.

1.1 Travel Behavior and Sustainability of the Transport System in Germany and the US

Germany and the U.S. are among the most motorized countries in the world. However, in 2010, Americans owned 30 percent more cars and light trucks per capita as Germans (766 versus 585). Americans also drove for a much higher share of daily trips (83% vs. 58%) than Germans. By contrast, Germans were 4 times more likely to ride public transport (8.5% vs. 1.9%), 2.5 times more likely to walk (23.7% vs. 10.5%), and 10 times more likely to cycle (10.0% vs. 1.0%). A higher share of trips by automobile in the U.S. is related to greater annual driving distances for Americans than Germans (21,500km vs. 11,000km).

Table 1 compares indicators for the sustainability of the transport systems in Germany and the U.S., covering three commonly cited dimensions of sustainability: equity, environment, and economy. Driving for fewer trips and shorter distances contributes to more sustainable transport in Germany. Overall travel, and especially walking and cycling, are safer in Germany than the U.S. Moreover, higher levels of walking and cycling in Germany contribute to more physical activity and lower obesity levels in Germany than the U.S. Compared to Germany, households and the public sector in the US spend more on transport. Moreover, governments in the U.S. spend more on roadways than they collect in taxes and fees from roadway users. In Germany, roadway users pay more in fees and taxes than governments spend on roadways. Public transport operation is more financially efficient in Germany. Finally, Germany's transport system is also more sustainable from an environmental perspective when comparing transport energy use and CO₂ emissions.

Selected Sustainability Indicators

		USA	Germany
Safety and Health	Traffic Fatalities per 100,000 Population	11,1	5,1
	Traffic Fatalities per 1 Billion Vehicle Kilometers	7,1	5,9
	Cyclist Fatalities per 100 Million Kilometers Cycled	5,5	1,6
	Pedestrian Fatalities per 100 Million Kilometers Walked	9,7	1,9
	Percent Population Considered Obese (BMI>30; self-reported data)	23,9	12,1
Cost	Share of Household Expenditures for Transport	17,0%	14,6%
	Annual Household Expenditures for Transport	\$7.677	\$5.117
	Ratio of Roadway User Fees & Taxes vs. Roadway Expenditures by all Levels of Government	0,58	2,22
	Government Subsidy as Share of Public Transport Operating Budgets	59%	25%
Environment	Annual Ground Passenger Transport Energy Use per Person (in million BTU)	54,6	18,0
	Transport Sector Share of CO ₂ Emissions	32%	19%
	Kg of CO ₂ Equivalent Emissions per Capita from Ground Passenger Transport	3.800	1.200
	Grams of CO ₂ Equivalent Emissions per Passenger Km	210	110

Table 1: Sustainability Indicators for German and U.S. Transport Systems (Source: APTA 2011, David et al. 2008, Buehler and Pucher 2011, Buehler et al. 2009, EPA 2012, IEA 2012, IRTAD 2012, USDOE 2012, Pucher and Buehler 2010, UBA 2010, 2012, USDOL 2010, VDV 2011)

2. Transport in the Washington and Stuttgart regions: differences and similarities

In this paper the Washington, DC region (DC metro region) and the Stuttgart region serve as examples for similarities and differences between Germany and the US in land-use planning, transport systems, coordination of transport and land-use planning, and sustainable transport. Although there are differences in land area, population size, administrative structure, and economy, both regions share many similarities that render a comparison meaningful (see Table 2): Both are among the wealthiest regions of their country with strong economies and labor markets. Both regions showed relative economic stability during the recent economic crisis and experienced strong population in-migrating, resulting in a more diverse population. Washington, DC has a larger government sector and more industries associated with government, while Stuttgart has a stronger manufacturing and industrial engineering base. The population in the Stuttgart region is characterized mainly by industry, attracting a highly skilled workforce, while the government functions of the Washington, DC region result in a high share of transient populations, moving to and from the area with each federal election cycle.

Travel behavior in the central city of each region is similar: public transport accounts for 22% of all trips in Washington, DC and 24% of all trips in Stuttgart. Similarly, walking and cycling (29 and 32%) and the car (51 and 44%) account for comparable shares of trips in both cities (MWCOG 2010, Broeg and Erl 2012). Travel behavior displays large differences for the region as a whole and for the suburban areas in particular: In 2008/2009, driving accounted for 80.6% of all trips in the DC metro region, compared to 56.6% in the Stuttgart region.

The differences in percentage of trips by mode of transport between core jurisdiction and suburban areas are much larger in the DC metro region than the Stuttgart region (see Figure 1). In the DC metro region, the automobile accounted for more than 90% of all trips in suburban Fauquier, Prince William, Prince Georges, Anne Arundel, Charles, and Fairfax counties (MWCOG 2010). By contrast, the two most car-dependent suburban jurisdictions in the Stuttgart region -Nürtingen and Geislingen- had car mode shares of 70 and 75% (VRS 2011). Walking and cycling only accounted for about 6% and public transport for less than 2% of trips in most suburban jurisdictions in the DC metro region. Even in the most car-oriented jurisdictions of the Stuttgart region, walking and cycling account for more than 22

percent of trips and public transport's mode share is above 3%.

	Stuttgart Region	Washington Region
Size [sqm]	1,411	3,967
Population [million]	2.67	5.58
Population Core City	~ 600,000	~ 600,000
GDP [\$/inhabitant]	45,000	71,000
Car ownership [per 1,000 inhabitants]	544	744
Cars/household	1.1	1.8
Trips/day	3.5	3.9
Median trip distance [km]	5.0	5.6
Distances per day [km]	40	44
Daily travel time [min]	75	80
Average trip speed [km/h]	27	28
Share of trips by car of all trips (region) [%]	56.6	80.6
Share of trips by public transport of all trips (core only) [%]	24	22
Share of trips by public transport of all trips (periphery only) [%]	70-75 (Note: data are for the most car-dependent jurisdictions: Nürtingen and Geislingen)	> 90 (Note: data are for the most car-dependent counties: Fauquier, Prince William, Prince Georges, Anne Arundel, and Fairfax)
Unleaded Gasoline Prices per Gallon 2010 [\$]	7.0	3.0
Gasoline Taxes [\$]	4.84	0.53

Table 2: Socioeconomic, Demographic, and Travel Data for the Washington and Stuttgart Region (Source: U.S. Census Bureau 2010, Statistisches Landesamt Baden-Württemberg 2012, MWCOG 2010, TPB 2010, Zumkeller 2011 IEA 2012)

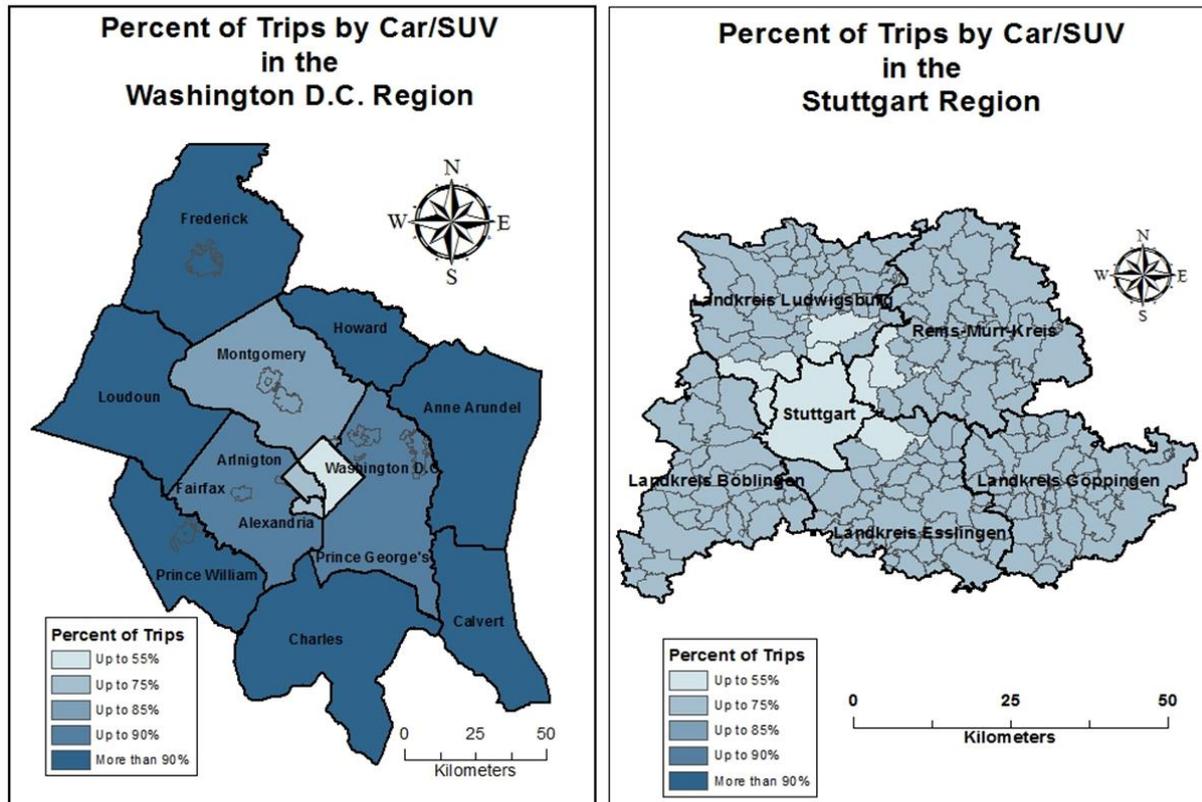


Figure 1: Shares of Trips by Automobile in Jurisdictions of the Washington, DC and Stuttgart Regions, 2008 (Source: Broeg and Erl 2012, MWCOG 2010, TPB 2010, VRS 2011)

3. Coordinating transport and land-use planning

Although the two central cities of Washington, DC and Stuttgart have similar travel mode splits, the overall regions show strong differences caused by the car-dependent suburbs of the Washington, DC Region. Differences in travel behavior can be explained by socio-economics, demographics, culture, and diverging transport and land-use policy and planning systems in Germany and the US. Due to space limitations, the following discussion focuses on transport and land-use planning systems. Detailed discussions about other factors can be found in our other publications (Buehler and Jung 2013).

3.1 Land-use planning

Differences in planning systems

In Germany, federal, state, regional, and local governments interact in a bottom-up and top-down land-use planning process, coordinating their spatial plans in an interactive way (BMVBS 2000). Municipalities in Germany have the exclusive planning right and draw up detailed land-use plans and decide the specific allowable uses of land. Local plans in Germany, however, are restricted by regional and state plans and must be in compliance with federal land-use, transport, and environmental laws (Kunzmann 2001). Federal involvement in spatial planning is limited to defining the legal framework for planning, ensuring consistency of planning techniques, and -in collaboration with the states- setting broad strategic goals for spatial development such as sustainability (Wiegandt 2004).

The regional level plays an important role in defining areas for Transport Orientated Development (TOD). The Stuttgart regional plan distinguishes between 'growth poles' that will capture most of the future settlement growth (Siedlungsbereiche) and areas with lower growth levels (Eigentwicklung). Areas designated for slower growth are typically not connected to public transport lines, while housing development is concentrated in the 'growth

poles' with public transport access. The goal is to reduce land used for settlements and to curb sprawl in the Stuttgart region.

In contrast to Germany, in the US there is no system of land-use planning that connects federal, state, regional, and local levels of government. US local governments play the predominant role in land-use planning and regulation. The US federal government does not engage in land-use planning and, in contrast to Germany's Federal Spatial Planning Act (Bundesraumordnungsgesetz) or Federal Building Code (Baugesetzbuch), there is no federal legislation prescribing the overall land-use planning process at lower levels of government. Federal programs in the US influence spatial development and land-use decisions on the local level, through federal transport policy and finance, environmental regulation, housing and economic development, military spending, and the management of nationally owned lands (Kayden 2001). However, there is no integrating framework and as a result, most land-use planning in the U.S. is fragmented, uncoordinated, and almost always in the domain of local government jurisdictions (Schmidt and Buehler 2007).

In contrast to the fragmented system in the US, coordination and negotiation of different levels of planning authorities in Germany facilitates coordination with regional transport planning. For example, development can be more easily concentrated along public transport routes to provide high capacity public transport connecting to the centers of the region. The Stuttgart Regional Plan allots higher growth rates to communities with rail public transport than for those without. In the DC metro region individual municipalities decide how to connect their land-use to the metrorail system. For example, Arlington County built high density mixed use around its metro rail stops, while Fairfax County chose to build park and ride parking lots next to its metro stops.

Differences in land-use planning on municipal level

In both countries, the municipal level has the main responsibility for regulating land-use and in both countries similar planning documents guide land-use planning. In Germany the main instruments for land-use planning are the Land-Use-Plan (*Flächennutzungsplan*) and Local Building and Construction Plan (*Bebauungsplan*). The Land-Use Plan is a preparatory plan laying out the general outline of existing and future land-use by type (general types of use include housing, mixed use, industrial and commercial, special purpose). Furthermore, the Land-Use plan defines the so-called "inner zone" (*Innenbereich*) and "outer zone" (*Außenbereich*) of a municipality. In the outer zone, no construction is allowed, besides those types of typical uses for outer zones, such as agriculture or energy production. The Local Building and Construction Plan consists of legally binding urban development ordinances. In the Local Building and Construction Plan, the specific categories of land-uses, defined by the Land Utilization Ordinance, are constituted for small areas. Although both documents traditionally separate land-uses (Albers 1992), all categories have some flexibility to allow other uses (see below).

At the municipal level in the US, the most common type of land-use plan is called a comprehensive or master plan, which typically consists of maps and text. However, zoning, and not land-use planning, is the main tool of land-use control in the U.S. (Hirt 2012). With a few exceptions, virtually all local governments have passed zoning ordinances that limit the use of land in the entire jurisdiction. In both countries, industrial and residential uses are deemed incompatible. However, in contrast to Germany, with a few exceptions, U.S. zoning has emphasized the separation of all types of land-uses. For example, in Germany residential zones can include doctor's offices, apartment buildings, businesses, small shops, and restaurants. As a result, many German "residential" areas would be considered 'mixed-use' in the U.S. Additionally, compared to the U.S., German municipalities apply their zoning to smaller land areas - sometimes as small as a block. U.S. municipalities typically apply their zoning to larger areas of land. This results in longer trip distances that often make walking and cycling impractical.

As in Germany, local planning in the U.S. is influenced by the need to achieve

development patterns that best support the local budget. However, compared to German municipalities who mainly compete for business taxes, U.S. local governments focus more on local property taxes to fund local expenditures, such as police, water and sewer, or court services (Orfield 2002).

Strict separation of land uses, exclusion of apartment buildings, doctor's offices, corner stores, and small businesses from single family residential zones, and larger areas of single-use zoning result in longer trip distances in the U.S. Long trip distances and the separation of trip origins and destinations necessitate more trips by car in the U.S. because different activities (e.g., shopping, work, leisure) are more dispersed. Germany's practice of zoning for smaller land areas and the more flexible zoning code has helped to reduce trip distances and car dependence - even when planners did not explicitly coordinate transport and land use.

3.2 Transportation planning

German state and federal governments jointly developed the Federal Transportation Plan, which delineates a national transport strategy. Until the early 1970s, this plan focused mainly on automobile travel, but since 1973 it has included societal goals, such as preserving open space, or reducing traffic fatalities, energy use, and vehicle emissions (Koeberlein 1997). Gasoline taxes have traditionally been higher in Germany than in the US. In 2013, a gallon of premium gasoline cost about \$8 in Germany and \$4 in the US (EIA 2013). Over the last 40 years the German gas tax was raised several times to fund government expenditures, but never with the explicit purpose to curb driving. Since the mid-1970s, the German federal government has also provided dedicated matching funds to state and local governments for public transport capital investments - if projects are part of local comprehensive transportation plans, comply with land-use plans, and consider the needs of the disabled and the elderly. German federal traffic laws protect cyclists and pedestrians and making their safety an integral part of the German driver's license written exam and road test. Since the early 2000s, the German government has also published a national bicycle master plan (FahrRad!). However, most innovations, such as integrated city-wide bicycling networks, were pioneered and then widely implemented at the local government level. The federal government supported local efforts with technical guidance and flexible funding, which allowed municipalities to divert highway funds to non-motorized modes.

US federal and state transport plans have a long tradition of prioritizing highways over other modes of transport. Since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, the US federal government has also increased funding for public transport, walking, and cycling. However, ISTEA's attempts to promote alternatives to driving were accompanied by simultaneous increases in federal roadway funds. ISTEA required and helped fund regional transportation planning and coordination. However, most metropolitan planning organizations (MPOs) do not have any legal authority to enforce regional policy priorities or to alter decisions made by local government jurisdictions or state departments of transport. Moreover, MPOs do not make any specific land-use planning decisions.

Transport Planning the Stuttgart Region

Besides the Federal Transportation Plan general aims and projects are laid down in the General Transportation Plan of the State of Baden-Württemberg. Projects for road and rail are listed, but not prioritized. The plan provides ideas how to plan for non-motorized transport, but these are only suggestions to the regions and municipalities. The Statewide General Transportation Plan acts as framework for the Regional Transportation Plan of the Verband Region Stuttgart, an integrated concept for mobility in the Stuttgart Region and guideline for all measures and decisions about transportation planning. Transportation planning on the regional level is further specified by Local Transportation Plans of the municipalities in which infrastructure projects, quality of services etc. are laid down.

Different levels of government, like the State of Baden-Württemberg, the Verband Region Stuttgart and the municipalities issue calls for tender for public transport services. Service is provided by different (often public owned) public transport companies. Calls for tender stipulate the quality and frequency of services and provide funding if farebox revenues do not fully cover the operation costs.

Backbone of public transport in the Stuttgart region is the Stuttgart Regional Public Transport Organization (Verkehrsverbund Stuttgart, VVS). Forty-one transport companies, either private or government owned, collaborate in the VVS to jointly serve the counties of Böblingen, Esslingen, Ludwigsburg, Rems-Murr-Kreis, and the City of Stuttgart. The VVS is not only responsible for the operation of public transport, but also for the planning and building of new railway lines.

The VVS network comprises all public transport in the region, and its tickets apply to all modes of public transport. This coordination and integration of different modes of transport (commuter rail, metro rail, light rail, and bus) and across different transport companies (including services, schedules, and fares) makes public transport seamless and customer friendly helping to increase ridership. For public transport passengers in the region it does not matter which specific company provides the service. Regional tickets are valid anywhere in the region, schedules are coordinated, and customers can get information about public transport in the region from one integrated database for trip planning (e.g. www.vvs.de). Also the VVS offers steep discounts for daily, weekly, monthly, or annual tickets, for companies, students or elderly. This is especially attractive for daily commuters using public transport as an alternative to the car.

Transport Planning in the Washington, DC Region

Federal legislation in the US requires long- and short-range transport planning for states and metropolitan areas. State Departments of Transport (DOTs), such as the Virginia and Maryland Departments of Transport (VDOT and MDOT), are responsible for statewide transport planning. In Washington, DC, the District Department of Transport (DDOT) receives state planning funds from the federal government. Statewide long-range plans identify a vision for the state's transport system in the next twenty to thirty years. Goals in the VDOT and MDOT long-range plans include enhanced quality of service, better safety and security, system preservation, and environmental stewardship. Based on the long range plan, states develop four-year short-term plans, which prioritize projects and identify funding sources.

Similar to the state level, MPOs are mandated to develop and maintain metropolitan long-range and short-range plan. Long range plans contain a region's transport goals for the next twenty to thirty years and describe strategies how to achieve these goals. These plans estimate a region's future transport needs based on land-use forecasts, are updated every four to five years, represent the region's priorities, and include a financial plan with reasonable cost and revenue estimates. The Transport Planning Board (TPB) is the main MPO for the DC region. Key challenges identified in TPBs long range plan include funding, congestion on roadways and public transport, serving dispersed populations, maintaining the system, environmental quality, and CO₂ emissions. TPB also published a policy vision that guides regional transport investments with the goals to provide a range of transport options, reduce auto dependency, increase public transport use, coordinate transport and land-use, and maintain the existing transport system. Short-range plans include projects to be built within the next three to five years, are updated every four years, are fiscally constraint, and are approval by the state governor. To be eligible for federal funding, a transport project has to be included in USDOT-approved statewide and metropolitan short range transport plans.

TPBs vision and its long-range plan are closely related to a region-wide plan titled Region Forward—developed by the regional council of governments (MWCOG). As a result, the three plans' transport goals are consistent with each other. The land-use vision and scenarios developed by MWCOG and TPB are not legally binding for member jurisdictions, but they provide a forum for regionally-focused discussion. However, most decisions are made on the local level.

4. Best-Practice – Comparison of Arlington County’s Rosslyn-Ballston Corridor and Scharnhauser Park in the Stuttgart Region

Both Arlington County’s Rosslyn Ballston Corridor and Scharnhauser Park in the Stuttgart Region are best practices cases of planning for sustainable transport. This section provides a comparison of local policies in both areas. In spite of large differences in transportation and planning systems, there are many similarities in coordinating transport and land-use at the local level to achieve more sustainable transport.

Arlington

Like many urban areas in the U.S., Arlington County experienced an influx of residents and development after World War II, and then steady decline as the "postwar boom" receded. During the 1960s and 1970s local opposition to the construction of Interstate 66 through Arlington County lead to a scaled-down version of the highway and the location of 5 stations of the new regional Metrorail directly under the then declining Rosslyn-Ballston Corridor (TCRP 2011). Plans focused redevelopment within a quarter-mile walking radius of stations to allow for easy pedestrian access. Metrorail service between Rosslyn and Ballston began in 1979. In spite of a quadrupling of office space and housing units since the late 1970s, redevelopment has only generated modest increases in car traffic on local streets (Leach 2004). Many of the newly generated trips are by public transport. Between 1990 and 2012, average weekday passenger trips by public transport in the corridor rose by 42% from 67,600 to more than 96,000. Approximately 16% of corridor households do not own a vehicle, and in some residential developments, an estimated 40-60 percent of tenants do not use a vehicle on a daily basis (Arlington County 2008). Single occupancy vehicle commuting has been declining in the corridor, while commuting by walking, biking, and public transport have been increasing.

Scharnhauser Park

Scharnhauser Park, belonging to the City of Ostfildern, is a former U.S. military site - Nellingen Barracks- that housed approximately 7,000 U.S. soldiers until it was abandoned in 1992 (Stadtchronik Ostfildern 2011). Enhancing the transportation infrastructure, especially public transportation, was required as a precondition for development not only for the regional but also local level. The mayor of Ostfildern stressed that the development of Scharnhauser Park would only take place if the light rail to the area was extended (Stuttgarter Nachrichten 1993; Bender 1994). Based on the Master Plan’s estimate of 10,000 passengers per day, the Stuttgart Straßenbahnen AG (SBB) decided to extend the existing railway line from Heumaden to Nellingen via Scharnhauser Park. That meant that Scharnhauser Park would not have been built without rail access and the rail line would not have been extended without development plans for Scharnhauser Park ("No light rail without Scharnhauser Park, no Scharnhauser Park without light rail.") (Bender 2004, p 178). Starting in the year 2000, just one line served the extension from Heumaden to Nellingen, but already in 2000 the city of Ostfildern and the SSB decided to establish a new line, the U8. In the beginning, the U8 ran only during peak hours; however, due to the success of public transportation within Ostfildern and the popularity of connections to Stuttgart, the schedules were extended to the entire day and the line was further extended using previously abandoned tracks.

From its founding in 1975 to 2011, the city of Ostfildern grew by 8,500 inhabitants, from 28,000 to 36,500 inhabitants. Most of these gains were due to the development of the settlement of Scharnhauser Park: More than 70 percent of this increase occurred after the development of Scharnhauser Park started in 1994 (own calculation based on Statistisches Landesamt Baden-Württemberg 2012).

Comparison of Local Policies to Coordinate Transport and Land Use

The wide array of policies and programs utilized in support of the development of the Rosslyn-Ballston Corridor and Scharnhauser Park are characterized by four key features that have contributed to the success in planning for sustainable transport:

First, building dense and mixed land uses around public transport stops.

In *Arlington*, this meant targeting "bull's eye" zones of mixed-use and high density development around public transport stations. The stations are about 1km to 1.5km apart so that access to a station is within a ten to fifteen minute walk from anywhere in the corridor. Density around the stations is planned so that the highest intensity development is in the immediate vicinity of the stations, while development density "tapers" down progressively as the distance from a station increases. The stations also serve as focal points for distinct neighborhoods with mixed land uses and varying emphases on government, educational, retail, and business development that foster a balance of land-uses throughout the corridor.

Scharnhauser Park is not a typical suburban, low-density settlement with single and semi-detached housing structure, but rather urban comprised of housing with a mixture of low, medium, and high-density housing (single and semi-detached houses, row houses, town houses, city mansions, tower blocks). There are also areas of mixed use and for commercial activities. The settlement pattern is characterized by short distances to the stops of public transportation -no part of the new town is farther than 500m away from the new railway station- and high density figures.

Second, long-range and comprehensive plans are important to assure sustained success.

Arlington County's Comprehensive Plan served as a blueprint for the corridor's development. As the main policy guide for development of the county, it establishes "the overall character, extent, and location" of development (Arlington County 2012). In conjunction, Sector Plans outline the overall vision of development around each Metro station, including design standards, public improvements to the streetscape and open space, and locations of various development uses. The result of this multi-faceted body of planning documents and adjoining processes is a blueprint of the planning vision for the corridor is coherent and dynamic.

In the case of *Scharnhauser Park* the establishment of the Master Plan as guidance for the development of the area determined several planning procedures in advance: the City of Ostfildern decided to change the Land-Use Plan in a way that identified Scharnhauser Park as a 'growth pole' (see above). The new housing area is seen as a new city quarter on its own, not an addendum to Scharnhausen or the center of the city of Ostfildern. As a matter of fact, the Regional Plan appointed Scharnhauser Park as a "regional center for housing" in the northern and "center for commercial development" in the southern part of the area. In 1992 a first feasibility study and urban design competition started to develop new ideas for how to re-use the site. After an interim use for the athletes of the World Athletics Competition in 1993, the city of Ostfildern bought the whole area and a development statute (Entwicklungssatzung) was enacted that gives the municipality the right of receiving the parts of gains of property value for parcels of land. These received gains were be used to build the infrastructure needed. In 1994, a master plan for the re-use was created and first developments undertaken. The master plan foresaw about 3,000 housing units for about 9,000 new inhabitants and retail spaces and office/commercial space for about 2,000 employees on an area of altogether 141.3 ha (349.2 acres).

Third, citizen participation is the key.

Arlington's plans have been developed through extensive outreach efforts to the community, developers, and other stakeholders. As a result, policymakers, developers, and community members have been able to work together using a broad and stable

understanding that is also conducive to refinements to the planning principles and innovations.

Public participation also played a major role in *Scharnhauser Park*: besides the two-tiered participation process for the Land-Use Plan and Local Building and Construction Plan as laid down in the Federal Building Code (Baugesetzbuch), the elaboration of the Master Plan as accompanied by public participation and citizens meetings, discussing critical points of newly roads, social infrastructure like kindergartens and schools as well as the design of public space, latter seen as a key feature for the new quarter.

A fourth major feature is the coordinated programming and policies that together support diverse transport, housing, and business opportunities.

In terms of transport, *Rosslyn-Ballston Corridor* planners leverage public transport service, pedestrian and bicycle facilities, parking regulations, transport demand management programs, and marketing in order to encourage and enable use of alternatives to the automobile. The corridor offers a wide array of transport options that are centered around the five Metro stations. Additional transport options include local and regional bus service via Metrobus and Arlington Transit, bike-sharing through Capital Bikeshare, and car-sharing.

In the case of *Scharnhauser Park*, by negotiations between the different levels of government and spatial planning agencies, financial support for the municipality was guaranteed, spatial aims of future development of the city of Ostfildern were changed, and further development was channelled to the area of Scharnhauser Park. This could happen in particular by their counter-current revised spatial plans of the Verband Region Stuttgart and the city of Ostfildern, by which the city of Ostfildern could get the right of additional land claims needed for the development of the Scharnhauser Park. The land-use agreement demanded higher population densities in the area to be developed. At the same time, Ostfildern, the county of Esslingen, and the transportation agency agreed on the simultaneous construction of Scharnhauser Park and the extension of the railway line, tying the new settlement to the transportation system of the Stuttgart Regional Public Transportation Organization.

Overall, *Rosslyn-Ballston Corridor* and *Scharnhauser Park* policies regarding transport work in concert with one another and also support each areas larger policy framework. The results have been increasing levels of public transport use, cycling, and walking.

Key future challenges for the both include affordable housing, historic preservation, the cohesive design of the built environment, and the continued improvement of facilities for pedestrians and bicyclists (Leach 2004). Housing affordability in particular is one of the greatest challenges facing the *Rosslyn-Ballston Corridor*. The primary tool to preserve affordable housing is the zoning framework, which provides a variety of incentives for affordable units, including density bonuses and a requirement of one-for-one replacement of affordable units in a designated area called the Special Affordable Housing Protection District. In addition, the county has established a revolving loan fund, the Affordable Housing Investment Fund, which finances affordable housing development in the county.

Housing is one of the major concerns also in the Stuttgart region. On the one hand, there is still a significant amount of population in-migrating to the Stuttgart region; on the other hand, land is a scarce resource in the region, resulting in a rather high population density and real estate prices. Politics and planning have to deal with the conflict of offering enough parcels of land for the population while at the same time protecting the landscape and nature from exhaustive land claims and reducing traffic caused by commuting. With the conversion of the former military site Nellingen Barracks to the Scharnhauser Park development, a unique but challenging opportunity arose for the city of Ostfildern and the region as a whole. For the rather small city of Ostfildern, this opportunity was beyond financial viability, but by negotiations with various levels of government (District, State, Federal), an agreement on assumptions of costs could be achieved as well as different funds e.g. the State Rehabilitation Program or grants for the State Garden Exhibition¹ could be used to buy the military site and invest in the infrastructure needed.

5. Conclusion

The Washington, DC metro and Stuttgart regions mirror the national differences in travel behavior. Outlying suburbs in the DC metro region are much more car dependent than outlying suburbs in the Stuttgart region and account for much of the difference in travel behavior (more than 90 percent versus 70 percent of trips by car). By contrast, the cities of Washington, DC and Stuttgart have almost comparable mode shares of car use (51 percent and 44 percent, respectively).

Reasons for differences in travel behavior can be found in the transport and land-use policies and planning. Since the 1970s, and especially since the 1990s, all levels of government in Germany have implemented policies that increase the monetary and time cost of car travel (gasoline taxes in Germany are about nine times higher than in the US: \$4.84 versus \$0.53 per gallon). Moreover, most German cities and regions have promoted walking, cycling, and public transport as attractive alternatives to the car. Compared to Germany, US federal, state, and local transport policies during the last sixty years have been more favorable for the automobile. Moreover, land-use policies in the US more strictly separate land uses and increase distances between trip origins and destinations.

In Germany different levels of government coordinate their land-use plans in an interactive process. As long there is consensus about certain policies, like reducing land claims, decreasing GHG emissions or car dependency, these policies are easier to implement on the local level, resulting in a more concentrated, denser development of settlements at the axes of public transport. In the US, land-use planning remains fragmented across jurisdictional boundaries, uncoordinated between levels of government, and typically not integrated with planning for transport. On the local level, land-use regulations in Germany typically foster mixed-used, denser land area compared to the US. This reduces the necessity of traveling and car use.

While fragmented land-use planning in the US is often seen as an obstacle to more sustainable transport, our case study from Arlington County, Virginia shows how a local jurisdiction can foster the integration of transport and land use. *Arlington County* successfully focused mixed-use, dense development around stops of a new metrorail system. Practices used in Arlington are similar to current efforts to integrate transport and land-use planning for more sustainable transport in Germany. As the case study of *Scharnhauser Park* highlighted, there is a reciprocal interest in the (re-)development of certain sites for the local transportation agencies while such a development is more likely to take place if accessibility is provided by high-capacity public transport infrastructure. By this, Scharnhauser Park gives a good example of how public transportation is a catalyst for the (re-)development of certain areas, while at the same time this development is the prerequisite for investments in public transport.

References

- Albers G. 1992: Nutzungstrennung oder Nutzungsmischung - ein Dogmenstreit?, Darmstadt: Selbstverlag
- APTA 2012: Public Transport Factbook 2011, Washington, DC: American Public Transport Association
- Arlington County Planning Division 2012: The Comprehensive Plan, <http://www.arlingtonva.us/Departments/CPHD/planning/plan/CPHDPlanningPlanMain.aspx>
- Arlington County 2008: 30 Years of Smart Growth: Arlington County's Experience with Transit Oriented Development in the Rosslyn-Ballston Metro Corridor http://www.arlingtonva.us/departments/CPHD/planning/powerpoint/rbpresentation/rbpresentation_060107.pdf.
- Bassett, D. et al. 2008: Walking, Cycling, and Obesity Rates in Europe, North America and Australia, *Journal of Physical Activity and Health* 5 (2008), 795-814;
- Bender J. 2004: Geschichte des Scharnhäuser Parks 1783-2004 [History of the Scharnhäuser Park 1783-2004] (Ostfildern: Schriftenreihe des Stadtarchivs Ostfildern, Bd. 1, 2004)
- BMVBS (Bundesministerium für Verkehr, Bau und Stadtentwicklung) (ed.) 2000: Urban development and urban policy in Germany, Bonn: Bundesamt für Bauwesen und Raumordnung
- BMVBS (Bundesministerium für Verkehr, Bau und Stadtentwicklung) (Hrsg.) 2011: Verkehr in Zahlen, Hamburg: DVV; S. 218f, 302f
- Broeg, W.; Erl E. 2012. Verkehrsmittelwahl. Socialdata, Munich.
- Brücke-Osteuropa 2012. Wikimedia Commons, licensed under Creative Commons-Lizenz Brücke-osteuropa, http://upload.wikimedia.org/wikipedia/commons/c/c2/Scharnhäuser_Park.jpg
- Buehler, R., Jung, W. 2013: Transport and Land-Use Planning in Germany and the US: Lessons from the Stuttgart and Washington, DC Regions, AICGS Policy Report 53, Washington, DC: AICGS
- Buehler, R., Pucher, J., Kunert, U. 2009: Making Transport Sustainable: Insights from Germany (Washington, DC: The Brookings Institution, 2009);
- Buehler, R., Pucher, J. 2011. Sustainable transport in Freiburg: Lessons from Germany's environmental capital, *International Journal of Sustainable Transport* 5:1 (2011), 43-70
- EIA 2013: Retail Premium Gasoline Prices, Selected Countries. Energy Information Administration, Washington, DC, <http://www.eia.gov/countries/prices/gasolinewithtax.cfm>
- EPA 2012: CO2 Emissions from Fossil Fuel Combustion in Transport End-Use Sector (Washington, DC: Environmental Protection Agency, 2012)
- Hirt, S. 2012: Mixed Use by Default: How the Europeans (Don't) Zone, *Journal of Planning Literature* 27:4
- IEA 2012: CO2 Emissions from Fuel Combustion: 1971-2009 (Paris: International Energy Agency, 2012)
- IRTAD 2012: Traffic safety statistics. International Road Safety and Data Analysis Group, OECD (Paris; OECD, 2012). OECD, Factbook (Paris: Organization for Economic Cooperation and Development)
- Kayden, J. 2001: National land-use planning and regulation in the United States: Understanding its fundamental importance, in: Rachele Alterman (ed.) 2001: National-level planning in democratic countries, Liverpool: Liverpool University Press
- Koerberlein, Ch. 1997: Kompendium der Verkehrspolitik. Munich: Oldenbourg Press.
- Kunzmann, K. 2001: State planning: A German success story? *International Planning Studies* 6:2 (2001), 153-166.
- Leach, D. 2004: The Arlington County Case Study: Rosslyn-Ballston Corridor, in Hank D., Ohland, G. (eds.) 2004: The New Transit Town: Best Practices in Transit-Oriented Development, Washington, DC: Island Press
- MWCOG 2010: 2007-2008 Regional Household Travel Survey (Washington, DC: Metropolitan Washington Council of Governments, 2010);

- Orfield, M: 2002: *Metropolitics: The new suburban reality*, Washington, DC: The Brookings Institute Press
- Pucher, J, Buehler, R. 2010: *City Cycling*, Cambridge, MA: MIT Press
- Schmidt, S.; Buehler, R.: 2007: *The Planning Process in the U.S. and Germany: A Comparative Analysis*, *International Planning Studies* 12:1 (2007), 55-75.
- Siedentop, S. 2011: *Settlement and transport: how does the constructed city influence our travel behaviour?* 5th World Congress of the global network 'Cities for Mobility', Stuttgart, July 4th 2011
- Stadt Ostfildern 2012: *Stadtentwicklung Ostfildern*, Email from 20 November 2012
- Stadtchronik Ostfildern 1992-2011, Aufgestellt vom Stadtarchiv Ostfildern, Stand: 31 December 2011; http://www.ostfildern.de/Stadtchronik+1975_2010-p-581.html
- Statistisches Landesamt Baden-Württemberg, Regionaldatenbank [Regional data base], 2012, <http://www.statistik-bw.de/SRDB>
- Statistisches Landesamt Baden-Württemberg 2012: *Bruttoinlandsprodukt, Bruttowertschöpfung nach Wirtschaftsbereichen in jeweiligen Preisen seit 1991* <http://www.statistik.baden-wuerttemberg.de/SRDB/Tabelle.asp?H=VolkswPreise&U=04&T=20013001&E=RV&R=RV11>
- Stuttgarter Nachrichten 6 April 1993
- TPB 2010: *Changes in daily Travel Patterns* (Washington, DC: Transport Planning Board, MWCOG, 2010);
- Transit Cooperative Research Program 2001: Report 145: *Reinventing the Urban Interstate: A New Paradigm for Multimodal Corridors*, Washington, DC: Transport Research Board
- Transit Cooperative Research Programm 2004: Report 102: *Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*, Washington, DC: Transport Research Board
- UBA 2010: *CO2-Emissionsminderung im Verkehr in Deutschland* (Dessau, Germany: Umweltbundesamt, 2010)
- UBA 2012: *CO2 Emissions from Passenger Transport* (Dessau, Germany: Umweltbundesamt, 2012)
- U.S. Census Bureau 2010: *Metropolitan and Micropolitan Statistical Areas* (2010), <http://www.census.gov/popest/data/metro/totals/2011/>.
- USDOE 2012: *Transport Energy Data Book*, 26 ed. (Oak Ridge: U.S. Department of Energy, Oak Ridge National Laboratories, 2005-2012)
- USDOL 2010: *Consumer Expenditure Survey*. (Washington, DC: U.S. Department of Labor, Bureau of Labor Statistics, 2010)
- VDV 2011: *VDV Statistik 2010* (Berlin: Verband Deutscher Verkehrsunternehmen, 2011).
- VRS (Verband Region Stuttgart) 2011: *Mobilität und Verkehr in der Region Stuttgart, 2009/2010* (Stuttgart, Verband Region Stuttgart, 2011).
- Weiss, K, 2004: "Stadt im Park: zehn Jahre Stadtteil Scharnhäuser Park" *Werk, Bauen + Wohnen* 93:9 (2006), 12-17. <http://dx.doi.org/10.5169/seals-1845>
- Wiegandt, C. 2004: *Mixed land-use in Germany: Chances, benefits and constraints*. Planning National Center for Smart Growth Research and Education, University of Maryland, College Park
- Zumkeller, D. 2011: *Verkehr in der Region Stuttgart*, Stuttgart, Karlsruhe Institute of Technology, 2011

ⁱ The Federal or State Garden Exhibitions are exhibitions of gardening, but also mainly used for urban or regional development, especially Brownfield areas

Planning for balanced Industrial development in Vidarbha region, Maharashtra, India

Asst. Prof. Amruta Khairnar, Vidya Pratishthan

1. Abstract

Disparity in India has been persisting since independence causing many socioeconomic problems and its removal has become the most prime objective of the planned development in India. Hence, initial segment of the paper deals with district wise level of development in Vidarbha region based on socioeconomic factors and identifies the most affecting factor responsible for imbalance in development. As a result of this segment, "Industrial Sector" has been taken as the prime factor responsible for such disparity through Regression analyses. Now, In order to achieve balanced industrial development, the later segment attempts to study district wise prospects of development in terms of investment through Location quotient analyses and also identifies district wise high potential local industrial clusters. The policy guidelines aim at cluster theory for competitive microeconomic development. The proposals mainly focus on micro-economic (firm level) development which will help the poorer districts to grow faster.

2. Introduction

Regional disparity in the level of economic development has become the vital problem for developed and developing countries. Disparity in India has been persisting since independence due to provincialism and sub provincialism causing many socioeconomic problemsⁱ and its removal has become the most prime objective of the planned development in our country. So ideally the development should enhance the human capabilities, ensure the equitable distribution of benefits of the economic growth and give an equal chance to everyone to participate in the working society. Such disparities can be observed at various levels like national, state, and regional. One of such states with the interregional and intraregional disparity is Maharashtra. It has a reputation for progress and development in economic terms and is considered as the most developed state since the time of Independence due to higher percentage of urban population. But as per the Human Development Report (HDR) published in 2010 there are widespread inequalities in the distribution of resources which have led to regional disparities, acute poverty and high level

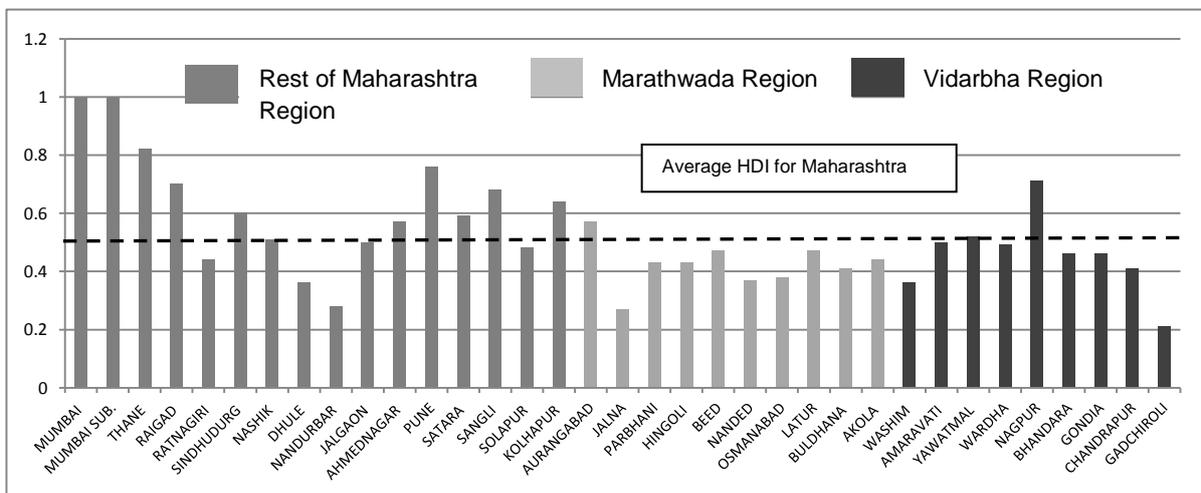


Figure.1 District wise HDI for Maharashtra state (Source- Human Development Report, 2010)

of unemployment. Maharashtra state comprises three regions namely, Marathwada, Vidarbha and Rest of Maharashtra. Vidarbha region comprises Nagpur and Amravati sub region. To work out the study at the regional level, Nagpur Sub region has been selected instead of Amravati Sub region because of the better data availability.

Vidarbha region of Maharashtra state lags behind in the overall development. HDR (2010) showed that human development index (HDI) is the lowest for Nandurbar and Gadchiroli districts (0.21) and highest for Mumbai. The average HDI for the state of Maharashtra is 0.58 (Refer Figure 1). In Maharashtra, 19 districts showed HDI less than the state average. Out of those districts most of the districts are belonged to the Vidarbha region. This region is completely neglected, unlike the Western and some of the South-Western districts, which get the Lion's share of State funding and attention. Recently Farmer's suicide has become the major concern in Vidarbha region. From 1997 to 2006, the region has witnessed 36,428 cases of suicide among cotton farmers owing to debt. It indicates that disparity within the state of Maharashtra has risen sharply. Hence Paper attempts to assess the development in Vidarbha region on the basis of socioeconomic factors and identifies the most responsible factor for the development and therefore Disparity. Aim of the paper is *firstly*, to analyse the district wise level of development on the basis of socioeconomic indicators and to identify the most affecting factor responsible for development. *Secondly*, to propose suitable development strategy based on the identified factor. Objective of the study is to induce balanced regional development which the most prime objective of the planned development in India.

3. Literature study

3.1 Location Quotient (L.Q.)

Location Quotient is basically the percentage of local economy to the reference economy. It gives the base of the economy weather it is 'Basic' or 'Non basic'. It can be calculated with the following formula.

$$\text{LOCATION QUOTIENT} = \frac{\text{LOCAL ECONOMY}}{\text{REFERENCE ECONOMY}} = \frac{\text{EMP. IN INDUSTRY 'X' IN DIST. 'A' (A) / TOTAL EMP. IN DIST. 'A' (B)}}{\text{EMP. IN INDUSTRY 'X' IN VIDARBHA (C) / TOTAL EMP. IN VIDARBHA (D)}}$$

Figure 2 Location Quotient formula

Location Quotient is always greater than zero. It could be less than one, equal to one or greater than one. If it is less than one that means the percentage of local economy is less than Reference economy. Hence the Industry is not meeting the local Demand for that particular District. That Industry could not Export so the economy is non-basic and it has non basic sector of employment. If the L.Q. is equal to one indicates that the Local economy is almost equal to Reference economy. Hence the Local Employment is just sufficient to meet the local demand. So Industries do not export and has the non-basic sector employment. Third condition, if the Location Quotient is greater than one that means the Local employment is not only meeting the local demand but also exports. Hence Jobs which are over above are identified as Basic sector.

3.2 Cluster Development

This was first proposed by Michael porter in 1990. It stimulates the Urban and Regional economic growth. Industrial clusters have increasingly been recognized as an effective means of industrial development and promotion of small and medium-sized enterprises. With the sectoral and geographical concentration of enterprises in an industrial cluster, the enterprises can better improve their competitiveness. This is due to the presence of specialized suppliers of raw materials, parts and components, machinery, skills and technology as well as other supporting services. Moreover, cluster development approach could be adopted as a key strategy for enhancing the productivity and competitiveness as well as capacity building of Micro and Small Enterprises (MSEs) and their collectives in the country. Clustering of units also enables providers of various services to them, including banks and credit agencies, to provide their services more economically, thus reducing costs and improving the availability of services for these enterprises.

3.3 Regression Analyses

Regression analysis is a statistical tool for the investigation of relationships between variables. It is used to ascertain the causal effect of one variable upon another- the effect of increase in development for a particular sector of the district upon the overall development of the district. In regression, the R² coefficient of determination is a statistical measure of how well the regression line approximates the real data points. An R² of 1 indicates that the regression line perfectly fits the data. Values of R² outside the range 0 to 1 can occur where it is used to measure the agreement between observed and modeled values and where the "modeled" values are not obtained by linear regression and depending on which formulation of R² is used. If the first formula above is used, values can never be greater than one. If the second expression is used, there are no constraints on the values obtainable.

4. Data and Methodology

First objective of the paper is to study the overall development of Vidarbha region on the basis of chosen socioeconomic indicators at district level. The socioeconomic indicators selected for this study are mentioned in figure. Vidarbha region is comprised of Amravati sub region and Nagpur sub region. In order to do analysis at regional level, the focus is on Nagpur Sub region because of the better data availability. It comprises 6 districts namely; Wardha, Nagpur, Gadchiroli, Gondia, Chandrapur, and Bhandara. In order district wise level of development related to particular sector socioeconomic Indicators have been selected (Refer Table 4). Secondly, based on those Indicators district wise Sectoral Development Indices (SDIs) have been calculated for each kind of indicator. Thirdly, Composite Development indices (CDIs) have been calculated which gave overall level of development of the Districts within Nagpur Sub Region. Finally, the Regression between each SDI and CDI has been performed to understand the most affecting factor in the overall development of the District. For this analysis particularly Demographic, Industrial, Transportation, Agriculture, Livestock and Health & Education Indicators have been chosen as per expert opinion and industrial report published by Directorate of Industries in Nagpur.

Indicators	Sub Indicators
Demographic Indictors	I. Density II. Literacy Rate III. % Of Urban Population

	IV. % Of Women Literates V. % Of SC-ST Population
Industrial Indicator	I. No. Of Industries II. Investment In Plant And Machinery III. Employment
Transportation	I. Road Length Per100 Sq.km. Of Geographical Area II. Railway Route Length Per100 Sq.km. Of Geographical Area
Agriculture	I. % Of Net Area Sown II. % Of Area Irrigated More Than Once III. Average Yield Per Hectare Of Cereals IV. Average Yield Per Hectare Of Pulses V. Average Yield Per Hectare Of Cotton VI. Per Capita Food Grain Production
Livestock	I. No. Of Cows & Buffaloes In Milk Per 1000 Population II. No. Of Livestock Per 100 Population III. Livestock per Sq.km. Of Total Geographical Area
Health & Education	I. No. Of Hospital Per Lakh Of Population II. No. Of Beds In Public Aided Medical III. Institutions Per Lakh Population

Figure 4 Selected Socioeconomic indicators and sub indicators for Objective one.

As a result of the Objective one the factor responsible for the disparity in Vidarbha region is imbalanced industrial development. Hence the further study aims to achieve balanced Industrial development. In order to achieve this firstly, the district wise investment potential has been studied for Vidarbha region through location quotient theory and district wise surprising areas of economic strength have been found out. Secondly, high potential 'Star' industries have been found out with the help of "Location Quotient – Employment Growth Matrix". The 'Star' Industries could be developed as a cluster. Consequently, the Cluster mapping is proposed for the districts of Vidarbha region.

5. Results and Interpretations of Socioeconomic assessment

Human development report published in 2010 has already revealed Vidarbha region of Maharashtra state lags behind in the overall development. Within Vidarbha region only Nagpur district has shown HDI more than states average and rest of district lie below state's average with Gadchiroli district at lowest level. Now to have an exact idea of district wise level of development related to particular sector, the SDIs have been calculated. For example, to calculate SDIs for Industrialization; initially the sub indicators (Refer Figure 6) have been multiplied by the weightages as per expert opinion and factor analysis. Summations of such resultant products give the SDI for Industrial Development. Once the SDIs have been calculated; CDI for a particular district could be calculated by adding all the weighted SDIs. ⁱⁱCDIs for each district give the idea of the overall development of the districts.

Indicators	Calculation of Sectoral & Composite Development Index
Demographic Indictors	$(1 \cdot G_1) + (0.337 \cdot G_2) + (0.602 \cdot G_3) + (0.72 \cdot G_4) + (0.649 \cdot G_5)$
Industrial Indicator	$(0.99 \cdot I_1) + (0.992 \cdot I_3) + (1 \cdot I_3)$
Transportation	$(1 \cdot T_1) + (0.1 \cdot T_2)$
Agriculture	$(0.503 \cdot A_1) + (0.447 \cdot A_2) + (0.995 \cdot A_3) + (0.995 \cdot A_4) + (0.545 \cdot A_5) + (0.915 \cdot A_6)$
Livestock	$(0.94 \cdot L_1) + (0.996 \cdot L_2) + (0.148 \cdot L_3)$
Health & Education	$(0.115 \cdot E_1) + (1 \cdot E_2) + (0.1 \cdot E_3)$
Composite Development Index	$(0.87 \cdot G) + (0.9 \cdot I) + (0.964 \cdot T) + (0.72 \cdot A) + (0.87 \cdot L) + (0.99 \cdot E)$

Figure 5 Calculations of the S.D.I. and C.D.I.

The composite development index shows that Nagpur (CDI- 14905.74) is developed in almost all the aspects. Chandrapur and Bhandara are moderately developed whereas Wardha and Gondia are proved to be less moderately developed. Gadchiroli has shown least values for almost all indicators. The regression performed between all SDIs and CDIs ascertain that CDIs have shown strong correlation with indices of Industrial Development ($R^2 = 0.998$) & Education and Health ($R^2 = 0.57$). It implies that higher CDIs of the developed regions are mainly due to the development in the Industries and advancement in Education & Health. Moreover, Most of the Industries are concentrated in and around the metropolis Mumbai (western Maharashtra), leaving rest of the regions mainly Vidarbha (eastern Maharashtra) backward in terms of industrial development. Though the state's Industrial policy offers several incentives for new Industries, those incentives are not area specific and do not really attract industries in the backward areas. This concentration of industries in western Maharashtra state has resulted in 'Backwash Effect' (Myrdal) which is forcing people from the adjoining backward districts to migrate to Mumbai and surrounding areas in search of opportunities putting additional burden on city's infrastructure. This results in regional imbalance. Hence it is proved that balanced development in Industrial sector plays an important role to minimize the regional disparity in Maharashtra.

6. District wise investment potential

The location quotient calculated for districts; Bhandara, Chandrapur, Nagpur, Wardha, Gadchiroli, Gondia, gives the level of development and surprising areas of economic interest. In figure 6 on horizontal axis the Location quotients are placed and on vertical axis the industries are placed. Industries from no. 15 to 36 are Manufacturing Industries and the rests are Service Industries. The names of the industries are mentioned in figure 11. All the districts are arranged as per their location quotients. Say for Industry no. 15 (manufacturing food products) only Bhandara and Chandrapur districts have shown L.Q. greater than one. Which means only these districts are able to export manufacturing food products and hence high investment should be done in that sector. Likewise all the districts are arranged. Industry no, 27, 28, 35 etc. show blank space which means none of the district from Vidarbha region produces that kind of product. For Industrial products like Metal, transport equipment, Computer based activities Vidarbha region totally depend upon surrounding regions

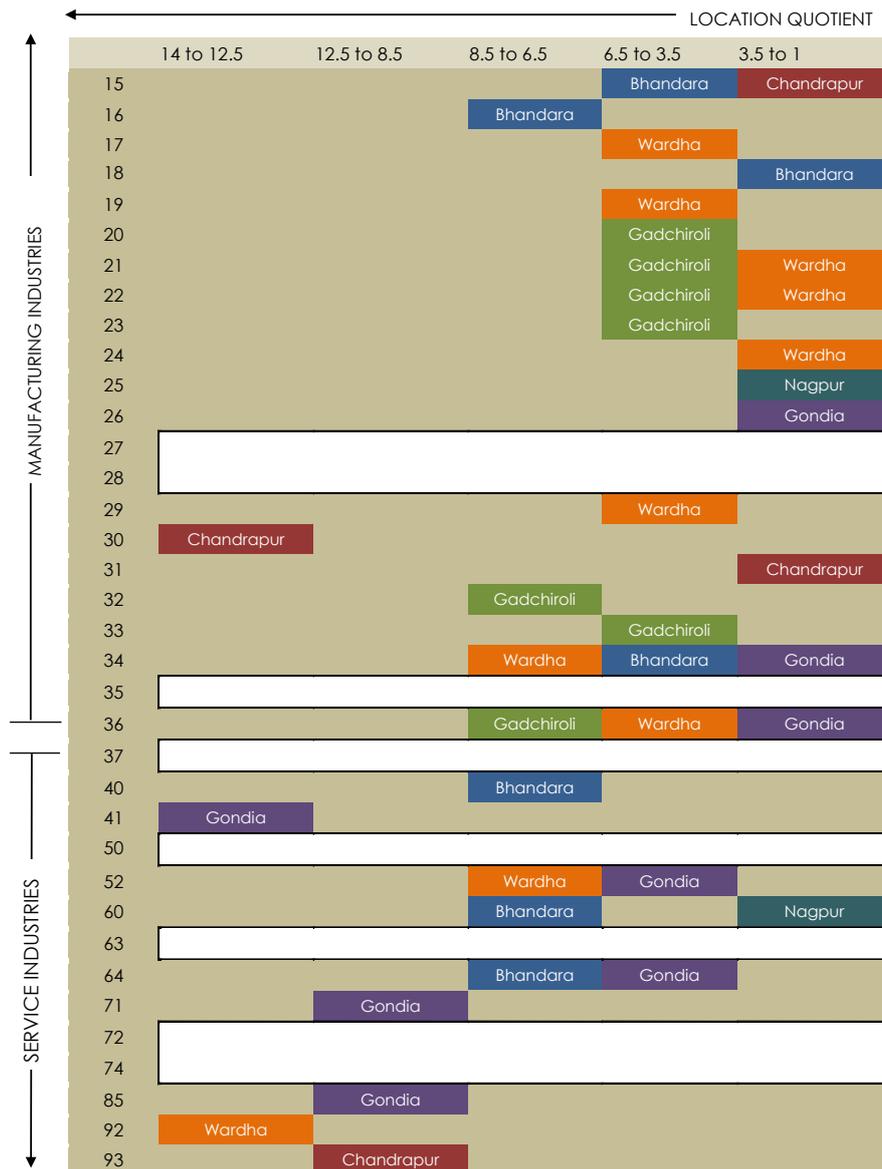


Figure 6 Location Quotient for all districts

Special attention should be given to those industries. In case of industry no. 31 only Chandrapur district is producing the Electrical and machinery apparatus. For that particular product whole Vidarbha Region has to depend on Chandrapur. Hence that Industry is the Surprising area of the economic. Similarly from figure 5 we can identify the surprising areas of economic strength for all districts. (Refer figure 7).

Districts	Surprising areas of Economic strength
Bhandara	Wearing Apparel, Dressing & Dyeing Fur , Electricity, Gas, Steam & Hot Water Supply , Tobacco products
Chandrapur	Food products & Beverages, Publishing & Printing, Electrical Material.
Gadchiroli	Wood, Products of Wood, cork, art
Gondia	Renting OF Transport Equipment (71), Other non-metallic mineral (26),
Nagpur	Rubber & Plastic Products (25), Land Transport (60)
Wardha	Tanning & Dressing of Leather; Manufacture of L, Recreation, Cultural & Sporting activities, Textile

Figure 7 surprising areas of economic strength

7. Cluster development approach

Since the best way to rise the productivity and innovative capacity is through local cluster development. For each district the high potential clusters have been identified with the help of 'Location quotient- Employment growth' matrix. It classifies industries into 'Stars', 'High potential', 'Low potential', and 'Threat'. Industries which come into star category have been selected as clusters for that particular district. (Refer Figure 8)

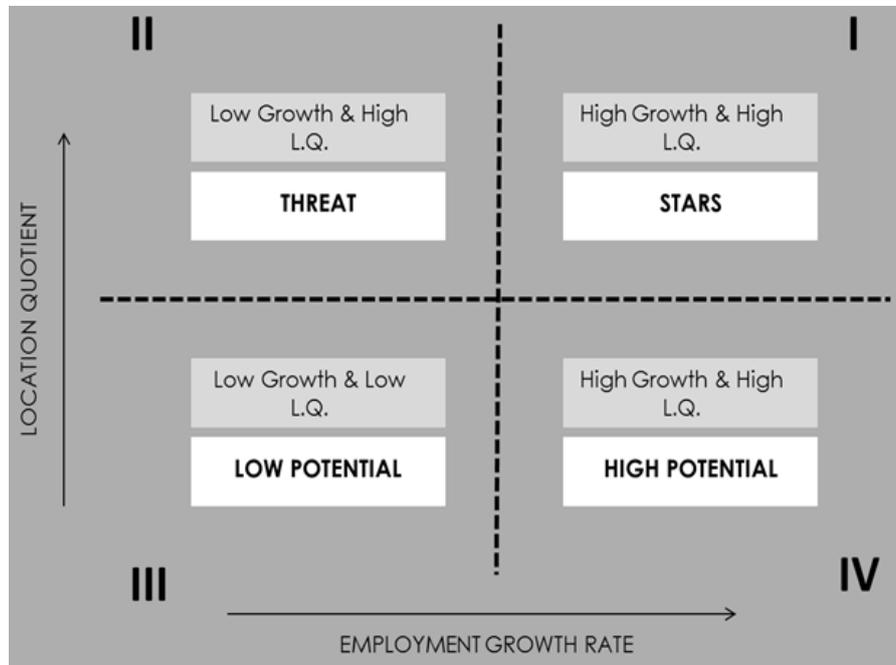


Figure 8 L.Q.- Growth Matrix (Source: USAID, Mahendra & Rashi Grover, Economic growth of the Mumbai Metropolitan region)

It gives the potential clusters for each district. As shown in the following Figure 8, L.Q. has been placed on the vertical axis and employment growth rate on the horizontal axis. The Industries which come under the right upper quadrant are termed as the "Star" industries. They have high location quotient and employment growth rate as well. These will be chosen for the cluster development. The industries which are coming under the second quadrant they are termed as "Threat" sectors. Although they have shown high L.Q. but the employment rate is declining hence further investment in those industries should be done carefully. In the third quadrant the industries are termed as Low potential Sectors as they have low LQ and low growth rates and therefore have low future potential. Sectors coming in the fourth quadrant have low location quotient but high employment growth rate. Although the L.Q. is low their employment growth rate is inclining. Hence these industries have investment potential. So they are termed as "High Potential" sectors and special attention should be given to them. In this manner from the L.Q –employment growth matrix potential industrial clusters have been proposed. The L.Q. - Growth matrix for each district have been worked out as shown in figure 8. Industries which are under first quadrant are chosen for cluster development.

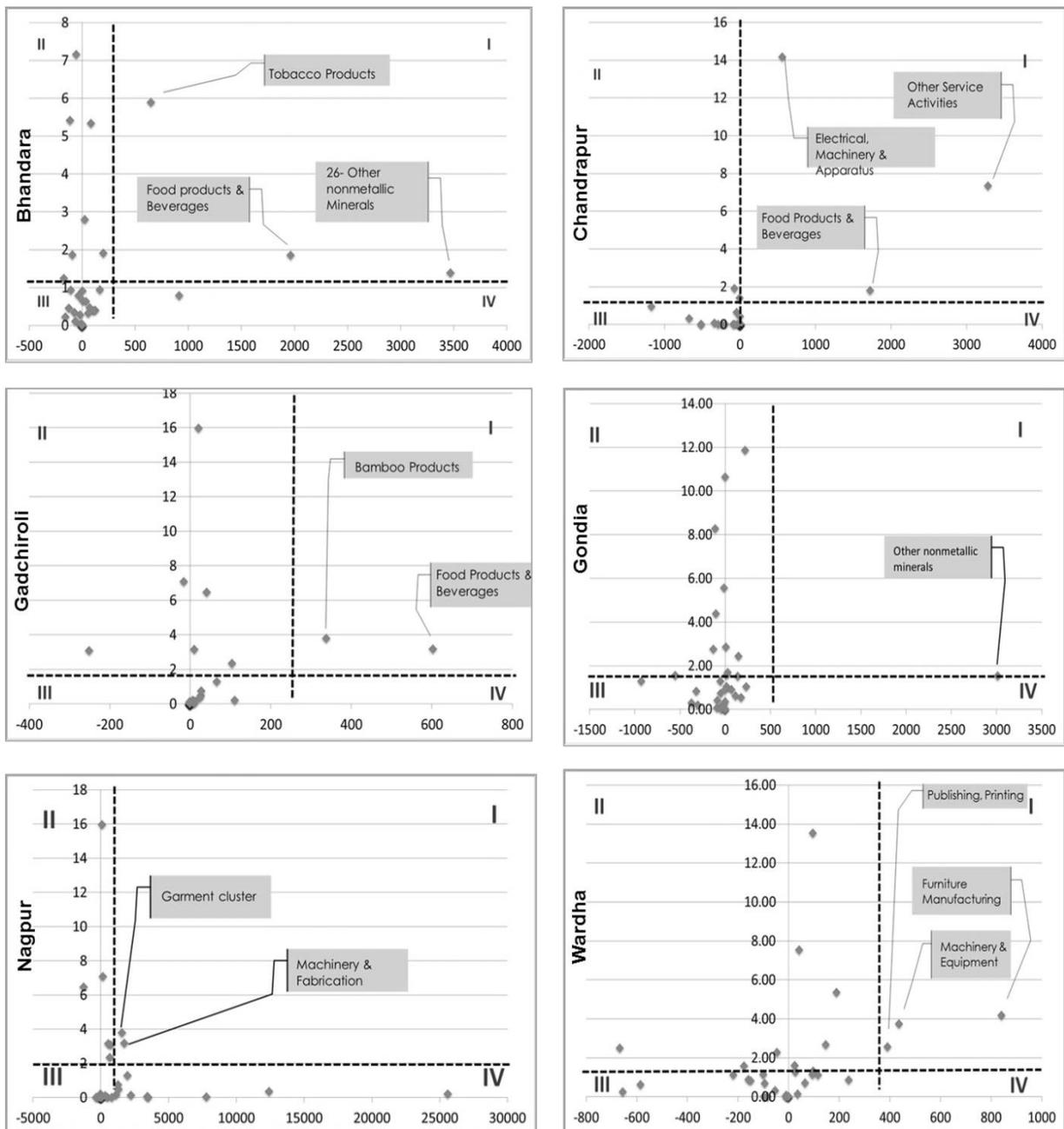


Figure 9 L.Q- Growth Matrixes for Bhandara, Chandrapur, Gadchiroli, Gondia, Nagpur and Wardha

Proposed cluster mapping

The probable clusters are proposed as per the L.Q. - Growth Pole Matrix (Refer Figure 8). The coloured symbol shows *Taluk*ⁱⁱⁱ boundary which could be developed as a cluster. It can be seen from Figure 9 that Nagpur district has a strong potential for Garment cluster and Dal cluster especially in Chikhali, Bagadganj and Kalmana district. Gadchiroli and Chandrapur have strong potential for Bamboo cluster. Non-Metallic clusters could be developed in Bhandara, Gondia and Chandrapur districts. *Taluk* wise clusters have been mentioned in the cluster map as shown in figure 10.

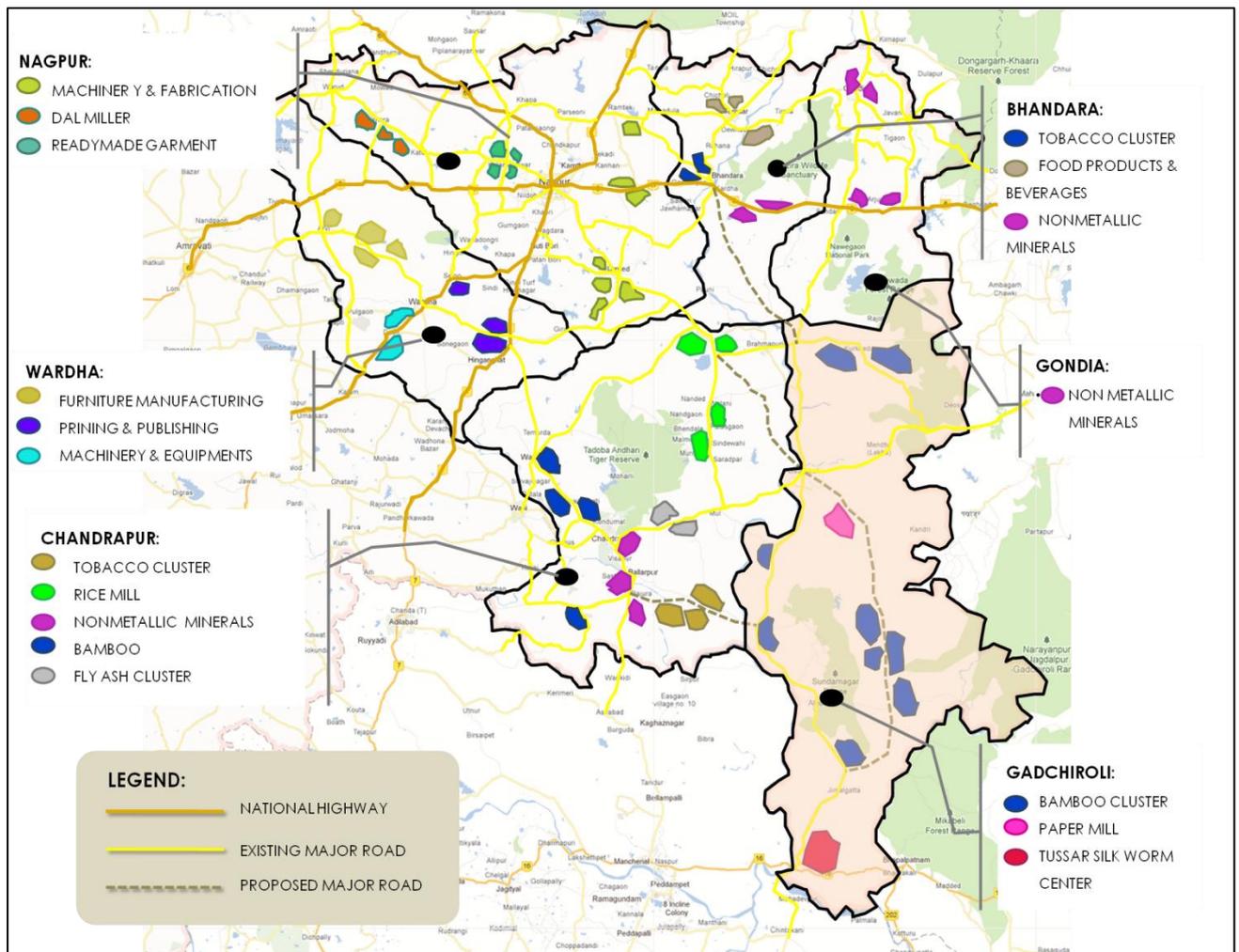


Figure 10 Proposed cluster Map for Vidarbha region (Nagpur sub region)

8. Conclusion

The empirical study in the paper ascertains that the developed regions are developed due to advancement in Industrial sector. This, however, is the prime reason for migration of adept class of society to developed region leaving rest of the region poorer. This puts extra burden on the developed city's infrastructure. Hence Backwash (Myrdal) effect could be seen in developed Nagpur district of Vidarbha region primarily due to Industrial development policies. Although Industrial policies give incentives they are not area specific and don't really attract industries in the Backward Region. The advancement in the Industrial sector which is the reason for development in developed districts and hence regional imbalance is the only solution for balanced development in Maharashtra state as well as in Vidarbha region. Hence it is important to find out high potential industries district wise and to propose the local industrial clusters to make the industries more sustainable since the best way to raise the productivity and innovative capacity is through local cluster development. In order to induce balanced industrial development aim of the proposal is to help poorer districts of the poorer region to grow faster. So that there will be less migration from poorer regions or districts. This will help to keep equal population density. Moreover due to the district wise Industrial development there will be same level of economic activity in each region or district.

Ultimately there will be equality of opportunity in each region which will help to minimize the inequality and will induce the balance development.

9. Annexure

Name of Industries

No.	Name of Industry	No.	Name of Industry
15	Manufacture of Food products and Beverages	33	Equipment of Medical, Precision & Optical
16	Manufacture of Tobacco products	34	Manufacture of Motor Vehicles, Trailers
17	Manufacture of Textile	35	Manufacture of Other Transport Equipment
18	Mfg. of Wearing Apparel, Dressing & Dyeing Fur	36	Manufacture of Furniture; Manufacturing
19	Tanning & Dressing of Leather; Manufacture of L	37	Recycling
20	Manufacture of Wood, Products of Wood, cork, art	40	Electricity, Gas, Steam & Hot Water Supply
21	Manufacture of Paper and Paper Products	41	Collection, Purification & Distribution of Wate
22	Publishing, Printing & Reproduction of Recorded	50	Maintenance & Repair of Motor Vehicle
23	Manufacture of Coke, Refined Petroleum Products	52	Maintenance & Repair of personal & household
24	Manufacture of Chemicals & Chemical Products	60	Land Transport (NIC Codes 1998 : 60211)
25	Manufacture of Rubber & Plastic Products	63	Supporting & Auxiliary Transport Activities
26	Manufacture of Other Non-Metallic Mineral	64	Post & Telecommunications
27	Manufacture of Basic Metals	71	Renting OF Transport Equipment
28	Manufacture of Fabricated Metal Products	72	Computer & related activities
29	Manufacture of Machinery & Equipment	74	Other business activities
30	Manufacture of Office, Accounting & Computing	85	Health & Social work
31	Manufacture of Electrical, Machinery & Apparatus	92	Recreation, Cultural & Sporting activities
32	Mfg. of Radio, Television & Communication	93	Other Service activities

Figure 11 Name of the Industries (Source: Directorate of Industries, Nagpur)

10. References

(2002). Human development Report .

Ketels, C. H. (2003). The Development of the cluster concept – present experiences and further developments. Duisburg.

Langford, C. H., & Hall, J. K. (2005). Complexity in Cluster Development: Towards an Evolutionary Theory to Guide Policy Development.

Nair, K. R. (August, 2004). ECONOMIC REFORMS AND REGIONAL DISPARITIES IN ECONOMIC AND SOCIAL DEVELOPMENT IN INDIA. Centre for Policy Research. New Delhi: Planning Commission of the Government of India.

Woodward, D. (2004). Porter's Cluster Strategy Versus Industrial Targeting. ICIT Workshop. Orlando, Florida: South Carolina Press.

Khairnar, A., & Sen, J. (2013). Planning for minimization of socioeconomic inequalities within Vidarbha region, Maharashtra, India. World association of Science, Engineering and Technology (p. 08). Madrid: WASET.

ⁱ (2002). *Human development Report*.

ⁱⁱ Let's say for calculating Sectoral Development Index for Industrial Development formula of **(0.99*11) + (0.992*12) + (1*13)** has been used where I1 (NO. OF INDUSTRIES), I2 (INVESTMENT IN PLANT AND MACINERY), I3 (EMPLOYMENT) are sub indicators. I1,I2 & I3 have been given the weightages of 0.99, 0.992 & 1 respectively as per the Factor Analysis.

ⁱⁱⁱ *Taluk* is a Head quarter for around 50 villages. District is comprised of many *Taluks* ranging from 5 to 20.

An exploration of the informal backyard rental sector in South Africa's Western Cape Province

Louis Lategan & Dr Elizelle Cilliers
North-West University, Unit for Environmental Sciences and Management,
Urban and Regional Planning, Potchefstroom, 2250, South Africa

This research (or parts thereof) was made possible by the financial contribution of the NRF (National Research Foundation) South Africa.

Abstract

South African low-cost housing development is extremely complex. The post-Apartheid government struggles with a fragmented and segregated urban inheritance and also with a housing demand which far exceeds delivery capacity. In response to inadequate delivery South Africa's otherwise destitute have turned to informal backyard renting as a last resort. Backyard structures can house a multitude of tenants in single one or two roomed wood or corrugated iron structures, which are traditionally constructed by tenants in the backyards of homes provided by government under such housing programmes as the RDP (Reconstruction and Development Programme).

This paper examined the state of the backyard sector in the Western Cape Province (South Africa) and investigated if and how the province attempts to address the plight of backyarders who live in dire conditions. It was found that the prevalence of backyard accommodation dramatically increases densities and reduces urban sprawl, but simultaneously increases pressure on infrastructure and public facilities. Backyarders are also dependant on their landlords for access to basic services and the informal nature of lease agreements leave them vulnerable to eviction at any time.

The main research question to answer was: 'What is the scope of the backyard sector in the Western Cape and what is being done to address the complexities of the sector in order to improve living conditions?' This paper found that the Western Cape Province tolerates the backyard sector as a 'necessary evil', but also that, except in the City of Cape Town, very little has been done to address the issue. Although the sector has been on the radar for some time as an integral component of the country's housing stock, a provincial and national policy which attempts to regulate the sector remains absent.

The research for this paper included the results of surveys conducted in low-income areas in the province, interviews with municipal and provincial officials and private stakeholders, national and provincial policy reviews and an evaluation of existing literature sources from a variety of disciplines.

The conclusions drawn in this paper and the subsequent recommendations made, may inform the formulation of provincial and national policies on the backyard sector, which may improve the lives of millions of South Africa's previously disadvantaged by enhancing a sustainable planning approach.

Backyard housing
Informal renting
Sustainable development

1. Introduction: Setting the scene, the Apartheid city of today

There has never been a greater influence on urban South Africa, than the policy of Apartheid which forced segregated and uneven development; ultimately producing the fragmented cities inhabited today. Apartheid not only influenced urban development during its oppressive reign, between 1948 and 1994, but left a legacy of segregation which has proven difficult to thwart. Ever since, South African planners have faced a continuous increase in the demand for low-cost housing, restricted resources to meet needs and an urban structure which protects the real-estate assets of the wealthy, but continues to segregate communities according to income level and subsequently, race.

The high cost related to well-located land which would provide access to socio-economic opportunities and the facilities located in urban centres, has continued to force low-cost housing projects to the urban periphery and beyond. Apartheid produced a wasteful urban structure which generated a disseminated settlement arrangement, which still hinders service provision and access to socio-economic and cultural amenities in the modern-day South African city (Makamu, 2010:39). According to Goebel (2007:291), since 1994, low-cost housing provision has mostly involved developing serviced townships on urban peripheries, inferring numerous economic, social, environmental and political concerns.

The shortage in housing and the unsuitable locations generally sourced for the development of low-income projects, have forced 712,956 South Africans into the backyards of their subsidy-housed compatriots (STATSSA, 2011:68).

1.1 The backyard shack, a temporary residence with permanent problems

The informal backyard rental sector was established and gained momentum in the 1980's, when the sector responded to shortages in sufficient accommodation in proximity to economic opportunity nodes such as central business districts (CBD's) (Ebrahim, 2011). According to Crankshaw et al. (2000:3) the pre-1994 South African government tolerated the extensive establishment of informal structures in order to compensate for the shortage of housing units delivered. Government's tolerance soon cultivated a culture of unofficial and unintended acceptance, which made land invasions a common part of the South African development culture by the mid-1980's. Morange (1999:6) corroborates that municipalities were too tolerant of squatting and invasion in the past. The tolerance granted to informal squatting on invaded land, paired with the neglect to establish and support a resilient formal rental market, provided the perfect conditions for the establishment and continued growth of the informal backyard rental sector.

The backyard sector can be observed in every settlement found within the boundaries of South Africa, in urban centres and even in more rural locations where formal housing has been provided. The sector provides much needed shelter to those waiting to be housed by the South African government's Reconstruction and Development Programme (RDP). Eglin (2011:1) states that South Africans waiting for the keys to their RDP homes may be forced to continue living in rural areas, the homes of relatives or overcrowded backyard rentals for quite some time. Given the housing delivery backlog, rapid urbanisation, restricted funding, limited institutional capacity and wide-spread corruption, South Africa's otherwise destitute have turned to the informal rental market as a temporary residence. However, SDMS (2006:35) states that a quarter of backyard renters believe that they are destined to call backyard shacks home for the rest of their lives.

According to Lemanski (2009:474) backyard dwellings differ from other formal and informal housing options in that they share a demarcated stand with a formally developed unit in a formal housing area which is fully serviced. Watson (2009:3) states that two categories of backyard dwellings can be distinguished. Referring firstly to structures built by landlords with intent to rent to tenants. Secondly referring to structures built by tenants on spaces rented from landlords, mainly in the informal sector. The latter is a uniquely South African manifestation which distinguishes the local backyard sector from others in other developing countries (Crankshaw et al., 2000:1).

The shelter provided by backyard structures has largely been described as insufficient, unsustainable and detrimental to overall well-being. Morange (1999:6) states that backyard structures mainly consist of one or two rooms and are generally crudely constructed from wood, corrugated iron and even cardboard. These rooms are utilised for day-to-day living activities which include all culinary, hygiene and sleeping needs (Lemanski, 2009:473). Poor construction, limited space and the unhealthy conditions associated with the backyard sector make backyard habitation comparable to living in shacks in informal settlements. However even the restricted access to basic services enjoyed by backyard tenants, elevate their living standards above those of their counterparts in the shantytown townships, who are forced to survive on limited access to services, if any at all. According to Poulsen & Silverman (2005:4) backyard rooms increase residential densities, thereby combatting urban sprawl and may make more effective use of existing infrastructure investments. However the excessive establishment of backyard accommodation and the sector's dense proliferation throughout South Africa has placed an immense burden on the infrastructure networks already established.

1.2 The South African legislative and policy context

The existence and scope of the backyard sector has never been denied. Post-apartheid policies have continued to reference this segment of the market, but only to a limited extent. To date there has been no national policy aimed at addressing the management of current backyard stock, nor the regulation of future development in the sector. According to Watson (2009:6) past South African housing policies and policy makers regarded informal rentals as a transitory state, providing temporary shelter to those on their way to formal RDP projects. However Bank (2008:2) counteracts this notion; arguing that it has been wrongly assumed that backyard residents will naturally move to new RDP estates outside townships. In actual fact renters often remain in backyard structures, even when RDP estates are provided as alternatives, given the poor location of these projects, the transportation costs and the deficiency of economic opportunities associated with these new developments.

The sovereignty of the South African Constitution is obsolete. It is also one of only thirty (30) constitutions in the world which includes a right to adequate housing (Arenas, 2002:21). It thus follows that it is the Constitutional responsibility of the South African government to address the plight of those renting structures in the backyards of formal dwellings.

The most prominent housing policy to emerge after the advent of democracy was the White Paper: A New Housing Policy and Strategy for South Africa, released in 1994. The White Paper acknowledged the existence of the backyard sector and promoted concepts which could be reconciled with addressing the needs of the backyard segment. These concepts included: serving all segments of the housing market, enhancing the initiative of individuals to improve their housing circumstances, promoting access to socio-economic opportunities and basic services, promoting freedom of housing choice and removing past discriminatory mechanisms (RSA, 1994:8-29). However the White Paper did not independently influence or improve the regulation of the backyard sector at national or provincial level, nor did it contribute to the formulation of policies in this regard.

In response to escalating housing backlogs and the inferior quality of the units and neighbourhoods delivered, the South African government released *Breaking New Ground: A Comprehensive Plan for the Development of Sustainable Human Settlements (BNG)*, in 2004. The only direct reference to the backyard sector cited in BNG denotes the fact that more information on the 'scale, conditions, rental charges and facilities which are provided within this sector and the linkages between this sector and the broader residential property market', is required (RSA, 2004:8). The BNG continues the established trend of recognising the sector without providing guidelines for regulation and management.

Other key principles captured by BNG, which would be strengthened by a policy on sustainable backyard development, include: the establishment of new systems to address the housing backlog, shifting from product uniformity to demand responsiveness, informal settlement (and therefore informal unit) eradication, promoting densification and integration, enhancing housing and settlement design and quality and redefining the concept of social housing (RSA, 2004:7-19).

From a Provincial perspective there has also been little progress in addressing the plight of backyarders, in part due a lack of support by national government. The most notable attempts to address the sector can be found in South Africa's economic powerhouse, the Gauteng Province as well as in Western Cape. For the purpose of this study, the Western Cape's attempts will be considered.

2. The Backyards of the Western Cape

South Africa's Western Cape Province is located on the southern tip of the African continent. It houses 11.3% of South Africa's population and covers 10.6% of the country's land area (STATSSA, 2011:14). The Western Cape is also hailed as the most developed province in the country and is therefore widely recognised as a leader in innovative policy formulation and strategic planning. However the backyard sector in the Province has, just as in lesser developed areas of South Africa, remained largely underdeveloped. The Western Cape Department of Human Settlements (2010:7) states that in 2010 approximately 25% (375 000 across the Western Cape) lived in inadequate housing conditions which included shacks, backyard dwellings, overcrowded formal dwellings and formal dwellings with no sanitation.

Past provincial attempts to address the backyard sector have not been very successful and could not be effectively implemented. According to Wheelen (2013) the Western Cape Province's stance on the informal backyard sector is not officially represented in any policies or provincial frameworks. This does not however imply that the Province has no stance on the subject. The Western Cape Province's standpoint can be best synthesised as one of tolerance without much intervention. The Province has not attempted to address the sector, because it is a difficult problem to solve. Many of the most logical interventions could impose several unintended consequences, in effect cultivating more prospective problems. Only policies which can be introduced in an effective and sustainable manner will be considered by the Western Cape Province and to date no such backyard policy could be formulated. This is specifically related to the fact that policies need to be kept as simple as possible, whilst the backyard sector may require an overcomplicated approach, which would be difficult to implement at local municipal level.

According to Wheelen (2013) in the past the Western Cape Province considered a landlord subsidy. These subsidies would enable landlords to upgrade their backyards in order to improve the living conditions of their tenants. This initiative was formalised into an advanced policy, as words on paper, but was never piloted or introduced; largely due to the experience of the City of Johannesburg in Gauteng, where a similar programme inferred many unintended consequences.

Through these incentives landlords who already received housing subsidies were now further endowed with an improved housing product which inevitably increased backyard rent rates. This led to the displacement of tenants.

There are many pressing issues facing South Africa and the Western Cape Province in relation to housing delivery, with the backyard sector amongst the most in need of regulation. Wheelen (2013) states that it is recognised, especially from a health and safety perspective, that the backyard sector requires serious attention. However articulating this acknowledgment and formulating a policy based there upon, is a challenging prospect which the Western Cape government has not yet met.

The backyard rental sector has however been referenced in more recent provincial policies, including the Western Cape Province's Social Housing Strategy for 2010-2014. This strategy intends to increase the supply and effective administration of affordable rental accommodation as well as to unify the informal and formal rental markets. The Western Cape Department of Human Settlements (2010:19) states that the highest demand for rental accommodation is often found in the lowest income category, which is also the bracket in which backyard rentals are predominate. The strategy proposes to develop policies to support the expansion and formalisation of the supply in the backyard rental market (Western Cape Department of Human Settlements, 2010:7). However the broader success of this strategy in addressing both the formal and informal rental market is difficult to establish. The Social Housing Strategy 2010-2014 proposed initial implementation in eight leader towns, identified according to specific criteria. The general concept was to then expand the scope of the strategy to smaller towns in the Province. Yet, in 2013 the strategy had not yet made much headway in the eight leader towns identified and much less so in other smaller Western Cape towns. This may mainly be attributed to the fact that according to restrictions imposed by financing legislation and policies, municipalities may only use funding to improve property in ownership of the authority in question. This paired with the minimal (if any) number of rental units in the ownership of smaller local municipalities in the Province, may explain the lack of effectiveness. Restricted Division of Revenue Allocation (DORA) funding and the increased cost of developing rental units further burdens the expansion of rental stock and subsequently the regulation and improvement of the backyard structures which will inevitably be erected on these properties. The development of rental accommodation requires up to R200 000 (approximately \$20 000 USD) per unit. When this is compared to the development cost of a freestanding home for private ownership, with an average development cost of R100 000 (approximately \$10 000 USD) per unit, the latter is generally favoured by municipalities (De Beer, 2013).

Thus it follows that policies geared towards addressing the backyard sector, can only be effective where substantial formal rental stock in low-income areas exists. The City of Cape Town manages the largest rental stock in the Western Cape Province and as such has taken the lead in addressing the plight of its backyard subletters.

3. The City of Cape Town - Leading the cause

Cape Town is a metropolis which is called home by 3,74 million people, all from very different socio-economic backgrounds. It is a city which mirrors the inequalities and lack of integration seen in the rest of South Africa, even at the low-income level, where backyarders continue their hidden struggle in the yards of their fellow Capetonians.

In 2010 it was estimated that more than 41 000 backyard structures were located in the backyards of the city's 43 500 rental units, inferring a ratio of almost 1:1 (Mitchell, 2013). However the exact numbers of backyard tenants are in many cases based on estimations and outdated databases. According to HPC (2011:8) Cape Town's backyard settlers deserve targeted interventions which address the exposed, relegated and financially vulnerable state of their circumstances. In this regard the Metro needs to fulfil its Constitutional obligations by responding to the plight and basic rights of backyarders as Capetonians and South Africans.

Measures which attempt to address the plight of Cape Town's backyard tenants can be traced to as late as 2010, when the city's department of housing policy and research was mandated to further investigate the sector and identify possible measures for improvement (Mitchell, 2013). Following these instructions, three pilot areas were identified within the Metro. These pilot areas were Factreton, Hanover Park and Langa.

At the outset door-to-door surveys were conducted in order to establish the scope of the sector with regard to the number of backyard settlers and structures housed in the yards of properties which were part of the City of Cape Town's rental stock. Following these surveys the City approved an initiative to provide backyard residents in the pilot areas with additional basic services. These services include an additional enclosed flush toilet, running water, a prepaid electricity meter for up to three backyard families and one additional refuse bin (Mitchell, 2013). The City of Cape Town specifically targeted service provision as a primary initiative, because even where backyarders are on the housing waiting list, for many their backyard residences will remain home for a long time to come. In addition it was found that wherever there was any disagreement between backyard tenants and their landlords in main dwellings, disputes resulted in the refutation of access to services by the renters of main dwellings. In addition many backyard families were exploited by main dwelling renters, who charged exuberant fees for the use of services which they themselves receive for free or at a minimal service charge.

Programmes aimed at upgrading infrastructure, are however inevitably associated with a number of challenges and requirements which need to be met, including:

- Upgrading bulk capacity in order to meet increased pressure on infrastructure networks brought about by additional service connections.
- Preventing main dwelling landlords from demanding increased rents in return for the use of the services provided to their yards by the City.
- Effectively communicating that infrastructure upgrades are not implemented in order to convert backyard structures into permanent homes, but rather as a means to enhance temporary living conditions before relocation to formal units can be facilitated.
- Regulating and restricting the volume of water and electricity which can be accessed by backyard renters.
- Introducing minimal interference with established and fragile landlord-tenant relationships.
- Preventing the displacement of backyard renters in favour of the family members of main dwelling renters, who wish to take advantage of improved services.

Many of Cape Town's backyard structures in 2011 did not comply with the provisions of the National Building Regulations and Building Standards Act 103 of 1977. In compliance with Act 103 of 1977 provisions, the Housing Directorate is required to ensure that backyard structures in the backyards of the city's rental properties are safe and up to standard (HPC, 2011:9). The draft backyard policy currently under formulation does not prioritise the physical quality of the backyard structures to which services are being provided.

The policy may however require new backyard structures to be registered in order for tenants to apply for the extension of services to their dwellings.

At the time this research was conducted, it was not yet clear when the new backyard policy would be completed and implemented. However where basic services had been upgraded in the pilot areas identified, the initiative was very successful and provided valuable insight into best practice principles to be introduced across the Metro and beyond. However the manner in which the ultimate policy could be introduced across the Province remains uncertain, especially given the lack of rental housing in smaller towns. Thus the effects of an unregulated backyard rental sector will continue to be felt throughout the province, especially in smaller towns.

4. Oudtshoorn and the consequences of an unregulated backyard rental sector

The town of Oudtshoorn is located in the Garden Route, a picturesque part of the Western Cape, known for its diverse landscape and agriculture- and tourism based economy. Oudtshoorn is home to 95,933 people and covers a total area of 29,24km². Until as late as 2010, housing in the town was largely provided in the form of formal dwellings, backyard rentals and a small number of shacks, sporadically located throughout the extensions of Bongulethu and Bridgeton. However the status quo was irrevocably altered by the end of 2010, when large scale land invasion took place on the town's southern border. Now for the first time Oudtshoorn faced the prospect of housing and managing a sprawling informal settlement. This settlement was originally dubbed 'Riemvasmaak' by locals, but is now known as Rose Valley.

The origin of Rose Valley's settlers can for the most part be traced from migrations which took place from within Oudtshoorn's borders. It can be synthesised that Rose Valley was established not from the centrifugal forces exerted by the town on the surrounding area, but rather as a result of the centripetal forces within the town's borders; namely the unsustainable nature of its backyard rental sector. A survey conducted in 2012 found that 68% of the 100 participants engaged, migrated to Rose Valley from the backyards of formal units elsewhere in Oudtshoorn (Lategan, 2012: 189). According to Bruce (2012) these settlers were either asked to leave by landlords or chose to move to an area which offered some hope for individual home ownership in the future which improved on their backyard circumstances.

As is the case in the rest of the Western Cape Province and South Africa as a whole, Oudtshoorn's backyard sector was allowed to function autonomously, without much interference or guidance from the local authority; this in spite of the fact that the backyard sector continued to thrive and expand. According to Nortje (2013) it is very common to find up to five unattached backyard structures on stands located in the lower-income areas of Bridgeton. These structures may house family, friends or unrelated tenants of various ages. Although it seems that in Oudtshoorn most backyard tenants rent from family members who have extended a helping hand to their kin who would otherwise be destitute (Bruitjies, 2013; Julies, 2013).

In Oudtshoorn backyard living brings with it several social concerns, specifically related to crime and violent behaviour. According to Nortje (2013), although the South African Police Service cannot release official figures, a definite increase in crime levels can be observed in areas with a high concentration of backyard tenants. However this could relate to the low-income and unemployment levels also found here and not specifically to the prevalence of backyard structures.

Conversely, where backyard tenants are employed, a substantial percentage of their income is left to spend on alcohol and narcotics. The misuse of alcohol and cheap narcotics such as tik (similar to methamphetamine) then causes increased crime levels and worrying conditions for children to be raised under. As an outcome children become easy targets for sexual abuse, given the small spaces shared with family and unrelated neighbours who are constantly under the influence.

The relationships formed between landlords and backyard tenants are a further point of contention. The sheer number of Rose Valley settlers who moved to the area as a result of tainted landlord-tenant relationships, attests to this fact. As a result of the tension and conflict often associated with the backyard landlord-tenant relationship, 60% of the Rose Valley settlers who participated in the survey stated that they would not consider opening their yards to backyard settlers once they received their formal housing units (Lategan, 2012:195). In Oudtshoorn backyard renters generally pay anything from R50 to R400 (\pm \$5 to \$40 (USD)) to landlords for the spaces they occupy. Conflict frequently ensues because backyarders do not always comprehend the extent of the services and privileges included in their informal lease agreements. It seems that oral contracts are mainly negotiated, leaving great room for altercations. The majority of these conflicts can be attributed to disagreements regarding rents payable, access to services, including sanitation, and the volume of electricity and water (from the main house) to which backyard renters are entitled (Julies, 2013). In Oudtshoorn infrastructure provisions do not extend to backyard settlers and in this regard backyarders are dependent on the access granted by main dwelling landlords for their basic service needs. Thus, as seen in the initiatives underway in Cape Town, it seems as though providing backyarders with access to services may relieve the pressure on both infrastructure networks and landlord/tenant relationships. Improving access to basic sanitation may singlehandedly improve the health and overall wellbeing of backyard tenants. Sanitation is singled out, because most backyarders will still have access to water on the yards they occupy or at least within a 200m radius of their dwellings. However the lavatories currently provided and the infrastructure put in place to service them, are overburdened by the addition of countless backyard tenants who share facilities (Crouse, 2013; Andries, 2013). Conversely, upgrading infrastructure provisions may infer certain unintended consequences. Both the Brintjies and Julies families stated that they would feel entitled to an increase in rental income once their backyarders enjoyed improved access to services. Increased rent rates would render the backyard sector too expensive for many tenants who are unemployed or generate a minimal income, which may lead to eviction and displacement. In addition the problems related to the backyard sector are not limited to the level services enjoyed by renters, but also extend to the physical structures inhabited.

At present the construction of backyard units continues to infer legal and health problems. According to Crouse (2013) respiratory ailments such as tuberculosis is worsened by the lack of cross ventilation and the cold and wet conditions so often related to backyard living. According to Andries (2013) should other highly contagious diseases such as meningitis break out, the proximity in which many backyarders live in one yard, may have epidemic consequences. Where building plans are not submitted and structures not inspected, as experienced in the informal backyard sector in Oudtshoorn and beyond, basic building practices to ensure good health cannot be enforced (Andries, 2013). Crouse (2013) states that it is imperative that the current system of unregulated and mismanaged backyard settlement is addressed. Accordingly standards need to be established and enforced by formulating a set of guidelines for minimum construction standards which extend to location decisions, construction techniques and material choices.

With regard to choice of materials, Oudtshoorn's backyarders mostly shy away from the use of corrugated iron sheets given the immense temperatures experienced here in the summer. Backyard structures are more commonly constructed from wood fragments which are discarded by local timber yards and insulated with cardboard. Conflict often ensues over the best scraps of wood, which are used by some in the community for cooking and heating and by others for the construction of their backyard units. These clashes often end in violence. The use of recycled materials such as discarded wood may furthermore bode well from an environmental perspective, but also infers certain risks. For example wood structures are often not watertight and more importantly are fire hazards. According to the Julies family (2013) house fires are a common sight in Oudtshoorn's backyards, mostly as a result of a lack of electricity and the unsupervised use of candles; and secondly as a result of informal electricity connections which are exposed to extreme weather conditions. According to Crouse (2013) in some cases electrical wire barely suitable for indoor use is used to connect backyard structures with main dwelling units, mainly to overloaded sockets indoors. The resulting fires spread rapidly from yard to yard, leaving children especially vulnerable. As a result many backyarders sever their connections and choose to live without electricity rather than risk their own or the lives of their children.

Where corrugated sheeting is used, these materials are almost exclusively obtained illegally. In fact backyard residents often report their building materials stolen. After investigation these materials can frequently be found as components of backyard structures in close proximity from where they were taken. Especially in impoverished areas where individuals are not able to afford new or even used materials, the origin of their building supplies is always suspect (Nortje, 2013).

In spite of the hazards and harms so intertwined with backyard habitation, little has been done in Oudtshoorn to address the sector. Housing the settlers of Rose Valley will be the most significant step in support of backyard dwellers ever undertaken. This speaks volumes when one considers that the needs of these backyarders were only addressed once they took matters into their own hands, invaded land and exerted pressure on the local authority. However the Oudtshoorn Municipality is not to blame. The local authority can only function within the frameworks and funding allocations granted by Province and National government. In this regard Bruce (2012) states that there is no definitive policy which will manage illegal backyard structures in the Rose Valley development once housing delivery has taken place, as no such strategy exists, or is planned for the broader Oudtshoorn area. Housing recipients are however informed of the fact that the erection of temporary structures will be deemed illegal, but the enforcement of this principle has not proven to be effective in the past and did not deter the establishment of new backyard structures. Thus in Oudtshoorn the backyard sector will continue much as it has for the last thirty years, even when the new Rose Valley extension has been completed and new tenants inevitably welcomed into its backyards.

5. Conclusion

The apartheid city structure, past recklessness, restricted capacity and funding, current policy and legislative restrictions and housing backlogs which stretch into the millions, have all contributed to the unsustainable nature of present day backyard habitation in South Africa. The challenges faced in the Western Cape Province are echoed across the Republic, but the interventions recently attempted by the capital of Cape Town, may provide valuable best practice principles to be duplicated and more importantly, adapted to fit both local and national circumstances. As such, numerous conclusions can be drawn, which may influence future interventions at a national level.

In this regard it was found that the City of Cape Town's attempts at delivering basic services are admirable, but may only improve the lives of those renting backyard structures in the yards of properties owned by the City as part of its low-income rental stock. Broader implementation may be hampered by a lack of rental stock in smaller settlements and current legislation which prevents municipalities from administering municipal funds to develop properties not owned by the authority in question. Broader implementation of any strategy is discouraged by the fact that the Western Cape Province has not completed, piloted, or implemented any form of backyard policy, thereby implying, although not accurately, a lack of commitment and compassion. This has clearly impacted at both a Provincial and local level. In the small town of Oudtshoorn the impacts of a lack of policy and regulation can be noticeably observed. Here the conditions which resonate across the Western Cape Province and South Africa in general, convey the harsh and dire circumstances brought about by a completely autonomous informal backyard sector. In reaction to these conclusions, it becomes clear that policy interventions need to be sought which prioritise the regulation and management of the backyard sector at national level. Policies aimed at improving the lives of backyard tenants must prioritise both service provision and the physical quality of the structures inhabited, which can only be facilitated by policies aimed at upgrading existing stock and planning for the inevitable growth of the sector in the future. Any intervention will however need to address the restrictions imposed by current legislation and policies, and must most importantly empower local authorities to effectively manage and improve their backyard stock. Once some measure of control and improvement can be administered, the backyard sector may provide adequate shelter to those who will eventually be housed by subsidised housing schemes. For those destined to live out their days in the backyards of the Republic, effective policy intervention may not only provide dignity and the fulfilment of Constitutional rights, but may save the lives of South Africans who continue to struggle with both past and present injustices.

Acknowledgements

This research (or parts thereof) was made possible by the financial contribution of the NRF (National Research Foundation) South Africa. The opinions, findings and conclusions or recommendations expressed in this material are those of the authors and therefore the NRF does not accept any liability in regard thereto

References:

Andries, A. 2013. Oudtshoorn Health Inspector. [Personal Interview]. 25 June 2013. Oudtshoorn.

Arenas, A.G. 2002. Analysis of Infrastructure provision in low-income settlements, Port Elizabeth South Africa.
<http://www.infra.kth.se/bba/MASTER%20THESISSES/msc%20thesis%20Alejandro.pdf> Date of Access: 30 May 2013.

Bank, L. 2008. Rhythms of the Yards: Urbanism, Gender, and Backyard Shack Upgrading in a South African City. *Journal of Contemporary African Studies*. Available: EBSCOhost.

Breaking New Ground see Republic of South Africa.

Bruce, S. 2012. Oudtshoorn Town Planning Department. [Personal Interview]. 10 July 2012, Oudtshoorn.

Bruintjies. 2013. Backyard landlord and renters. [Personal Interview]. 25 June 2013. Oudtshoorn.

Crankshaw, O., Gilbert, A. & Morris, A. 2000. Backyard Soweto.
<http://onlinelibrary.wiley.com/doi/10.1111/1468-2427.00282/pdf> Date of access: 3 November 2012.

Crouse, P. 2013. Oudtshoorn Health Inspector. [Personal Interview]. 24 June 2013. Oudtshoorn.

De Beer, T.A. 2013. Deputy Director of Human Settlements: George. [Personal Interview]. 2 May 2013. Oudtshoorn.

Ebrahim, Z. 2011. Social Housing Regulatory Authority.
http://www.sahf.org.za/Images/2011%20Proceedings/PowerPoints/Zohra_Ebrahim.pdf Date of access: 2 November 2012.

Englin, R. 2011. Between a shack and an RDP House: Alternative Forms of Tenure Security. <http://www.afesis.org.za/Sustainable-Settlements-Articles/between-a-shack-and-an-rdp-house-alternative-forms-of-tenure-security> Date of Access: 11 July 2012.

Goebel, A. 2007. Sustainable urban development? Low-cost housing challenges in South Africa. *Habitat International* 31. Available: EBSCOhost.

HPC. 2011. Draft Interim Procedures for the Erection of Informal Structures in the Backyards of the City's Rental Stock for Residential and Non-Residential Purposes'.
<https://www.capetown.gov.za/GetDocument.aspx?Uniqueid=3417ed95-ab79-4af7-af12-33f72c607f40>. Date of Access: 4 April 2013.

Julies. 2013. Backyard landlord and renters. [Personal Interview]. 25 June 2013. Oudtshoorn.

Lategan, L.G. 2012. A Study of the current South African housing environment with specific reference to alternative approaches to improve living conditions. Master's thesis North West University: Unpublished.

Lemanski, C. 2009. Augmented informality: South Africa's backyard dwellings as a by-product of formal housing policies.
<http://www.sciencedirect.com/science/article/pii/S0197397509000289> Date of access: 28 February 2012.

Makamu, R.I. 2010. Background of housing delivery process in South Africa.
<http://ul.netd.ac.za/bitstream/10386/150/3/dessirtation%207-12-07.pdf> Date of access: 13 May 2012.

Mitchell, T. 2013. Head of Housing Policy and Research, City of Cape Town. [Personal Interview]. 6 May 2013. Cape Town.

Morange, M. 1999. Backyard shacks: the relative success of this housing option in Port Elizabeth. <http://www.springerlink.com/content/bd5vky9w0yu130ua/fulltext.pdf> Date of access: 3 November 2012.

Nortje. 2013. Sector Commander: Bridgeton, SAPD. [Personal Interview]. 2 May 2013. Oudtshoorn.

Poulsen, L. & Silverman, M. 2005. Design Strategies for the Densification of Low Income Housing.
<http://repository.up.ac.za/bitstream/handle/2263/10323/Design%20Strategies%20for%20the%20Densification%20of%20Low%20Income%20Housin.pdf?sequence=1> Date of access: 12 August 2012.

Republic of South Africa. 2004. Breaking New Ground: A Comprehensive Plan for the Development Sustainable Human Settlements.
www.web.wits.ac.za/.../BreakingNewGroundHousingPlanCabinetapprovedversion.pdf Date of access: 25 February 2011.

Republic of South Africa. Department of Housing. 1994. White Paper on a New Housing Policy and Strategy for South Africa. <http://www.dhs.gov.za/Content/planned/Docs/Housing%20White%20Paper.pdf> Date of access: 25 February 2011.

SDMS. 2006. Shishaka Development Management Services. <http://www.shisaka.co.za/>. Date of Access: 2 May 2013

STATSSA (Statistics South Africa). 2011. Census in Brief.
http://www.statssa.gov.za/census2011/Products/Census_2011_Census_in_brief.pdf. Date of Access: 5 June 2012.

Sustainable Human Settlements.
www.web.wits.ac.za/.../BreakingNewGroundHousingPlanCabinetapprovedversion.pdf Date of access: 25 February 2011.

Watson, V. 2009. Strategic literature assessment for informal rental research project:
Report to the Social Housing Foundation.
http://www.urbanlandmark.org.za/downloads/small_scale_rental_report_watson_2010.pdf.
Date of access: 28 February 2012.

Western Cape Department of Human Settlements. 2010. Building Sustainable Communities:
Rental Housing Strategy: 2010-2014
http://www.westerncape.gov.za/Text/2010/6/western_cape_rental_housing_strategy.pdf.
Date of Access: 25 February 2013.

Wheelen, P. 2013. Policy Researcher: Western Cape Province [Personal Interview]. 6 May
2013. Cape Town.

White Paper on a New Housing Policy and Strategy for South Africa see Republic of South
Africa: Department of Housing.

Does Polycentric Urban Spatial Development Lead to Less Commuting: A Perspective of Jobs-housing Balance

Dong LIN^{1*}, Andrew ALLAN¹ and Jianqiang CUI^{1, 2}

¹School of Natural and Built Environments, University of South Australia, North Terrace, Adelaide, South Australia 5001, Australia

²Urban Research Program, Griffith University, Nathan, Queensland 4111, Australia

1. Introduction

The research of whether polycentric urban spatial development lead to less commuting has created many debates during last decades (Cervero & Landis 1991; Naess & Sandberg 1996; Gordon & Richardson 1997; Cervero & Duncan 2006). There are two major reasons for the debates. One reason is whether polycentric urban development could provide more opportunities to enhance spatial matches between the job and housing location selections of workers. Accordingly, employment decentralization and polycentric evolution would shorten workers' commuting distance and duration. Another reason is that whether jobs-housing balance policies save on workers' commuting duration in metropolitan areas (Nowlan & Stewart 1991; Giuliano 1991; Wachs et al. 1993; Frank & Pivo 1994; Peng 1997; Scott, Kanaroglou & Anderson 1997; Levine 1998; Levinson 1998; Sultana 2002; Horner 2004; Cervero & Duncan 2006; Wang & Chai 2009). This paper will review empirical studies in relation to this crucially important research topic. An understanding of how urban spatial structure and jobs-housing balance influence commuting patterns can improve the management and strategic planning of cities to ensure that urban spatial pattern optimises the aggregate travel behaviour of urban commuters.

2. Urban Spatial Structure and Commuting Patterns

In a monocentric city, since there is a highly concentrated employment centre and residents generally live in suburb, there would be high commuting flows on radial routes into the centre because the urban commuting would have many origins for work trips but a concentrated destination. In reality, a polycentric city functions in a similar manner to a monocentric city – people are attracted by jobs from all over the city. But the commuting patterns are different (Bertaud 2003). There are two commuting models of polycentric city. One model is that the city has some sub-centres of employment of a similar scale and in such a kind of polycentric city, each sub-centre generates trips from all over the city. The characteristics of commuting present a wide dispersion of origins and destinations, appearing almost random. Another model is that there are also different sub-centres of employment but one sub-centre is more concentrated and stronger than others. The urban commuting flows would be composite of both random and radial patterns (Ingram 1997; Ding 2007; Bertaud 2003, 2009). Accordingly, various models of spatial structure have diverse influences affecting people's patterns of commuting particularly in trip duration, distance as well as modal choice (see Figure 1).

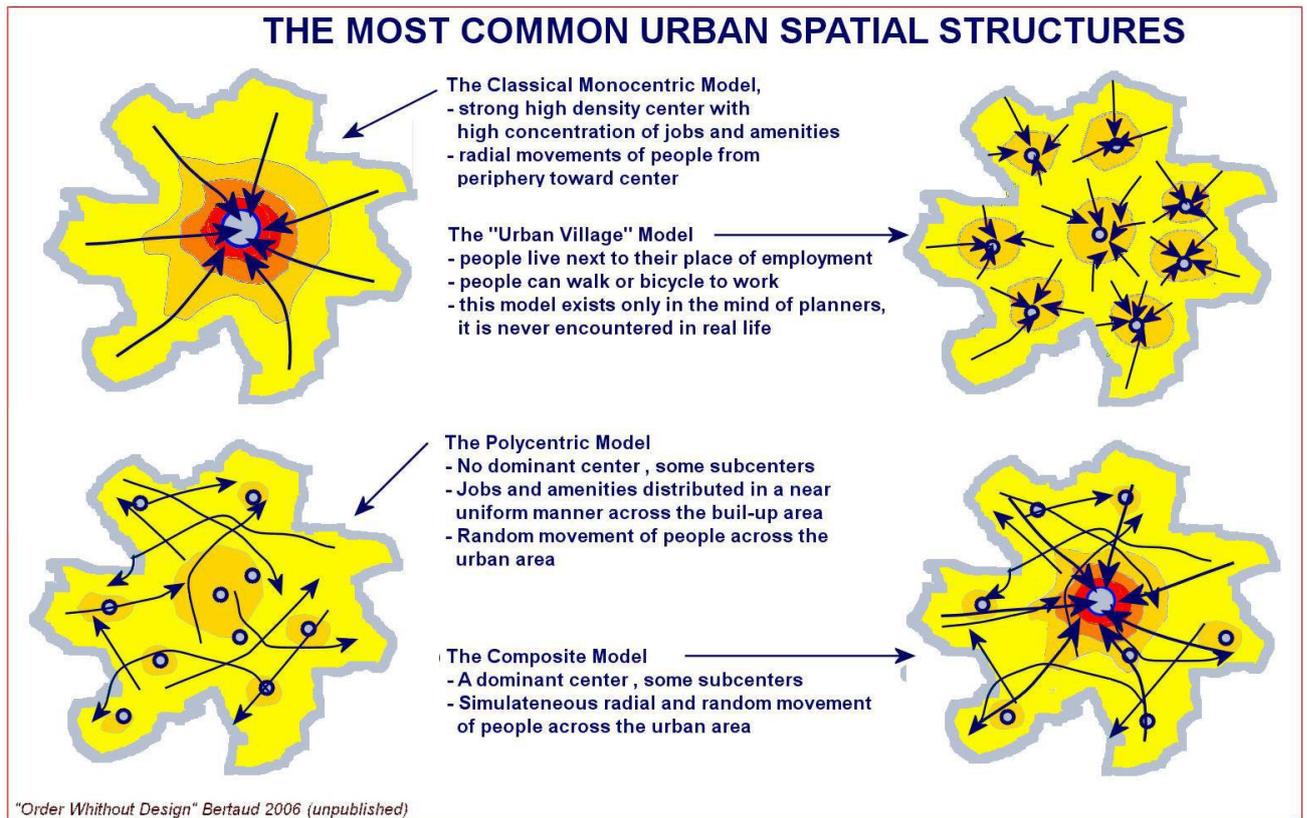


Figure 1: Commuting patterns in different models of urban spatial structure (Bertaud 2009)

3. Monocentric or Polycentric?

In the past twenty years, the issue of how employment decentralization and polycentric development in metropolitan areas has affected commuting patterns has led to many robust and continuing debates. Some scholars thought that a development pattern of highly concentrated employment centres in metropolitan areas is not as good as a dispersed and polycentric model for urban development. Suburbanization, as the main mechanism, has successfully reduced traffic congestion. It has altered roadway demand to routes with less congestion and away from central areas. With industry moves to the suburbs, the labour force has tended to follow, which has allowed many workers to enjoy reduced commuting times and less traffic congestion in traditional city centres (Gordon, Kumar & Richardson 1989; Giuliano & Small 1993; Gordon & Richardson 1997).

Previous studies based on analysis of detailed data of metropolitan travel from NPTS (Nationwide Personal Transportation Studies of U.S., 1977 and 1983-1984) and a commuting questionnaire included in the American Housing Surveys (1985) had showed that in monocentric or dense cities located in north east of the U.S such as Chicago and Baltimore, the commuting trips and time required tended to be longer as city size increased. But in some western coastal cities such as Los Angeles, the expansion of city size did not lead to an increase in trip distance. They also found that the trip distances of western cities were shorter than they were for north east cities in the morning peak time despite these cities' sizes being similar (Gordon & Wong 1985). There is another distinct difference in comparing commuting times for dense cities (New York, Chicago, Baltimore) with dispersed cities (Dallas, Phoenix, San Diego) - people who live in the downtown of a dense city spend 25% to 30% more time commuting (Gordon, Richardson & Jun 1991). Some scholars thought that dense cities result in much longer commuting times than decentralized cities (Gordon, Richardson & Jun 1991; Gordon & Richardson 1997). Hence, they believed that

this is an important point because it suggests that polycentric or dispersed metropolitan structures in western cities of the U.S. are especially suited to shortening trip distance and time. The reasons are that urban sprawl and polycentric development offer more and varied opportunities for faster commutes through changes of housing or employment, the relocation of enterprise, or the choice of uncongested roadways (Gordon, Richardson & Jun 1991).

There are also some similar case studies from European and Asian cities. One recent empirically based study from German urban regions based on data on commuter flows (German Census 1987 and German Social Security Statistics 2007) provides somewhat support for polycentric development. In their research they found that the polycentric city tends to be more travel-efficient when compared with a monocentric city. A polycentric city's commuting volumes are much higher than that of a monocentric city. The finding of their research shows that average distance of commuters in polycentric cities of Stuttgart (13.5 km) and Frankfurt (16.4 km) is lower than that experienced in the monocentric cities of Munich (19.0 km) and Hamburg (20.8 km) in 2007 (Guth, Holz-Rau & Maciolek 2009). There is another case study in Istanbul based on available data from 209 traffic analysis zones which showed that the average commuting time decreased in all the zones due to highway improvements with suburban clustered employment growth (polycentric development) in Istanbul from 1985 to 1997 (Alpkokin et al. 2008).

Some empirical studies from China also certified that polycentric development based on well planned sub-centres and regional policies would be beneficial to workers' commuting patterns. In research based on a household interview survey conducted in Beijing in 2006, Zhao, Lu & Roo (2011) argued that employment decentralization and polycentric development in Beijing would be beneficial to the jobs and housing relationship. Regional policies could impact on commuting patterns via the supply of various types of housing. The appropriate regional policies could be beneficial to polycentric development and control the dispersion of development and then achieve the aim of reducing commuting distances particularly for long distance commuters.

Several researchers have proposed a 'co-location hypothesis', that is, employment dispersion would enhance opportunities of residents and workers to change their housing or jobs locations as well as travel mode in order to avoid the congestion that lengthens commuting distance and travel time (Gordon, Kumar & Richardson 1989; Gordon, Richardson & Jun 1991). Accordingly, dispersion would reduce the phenomenon of urban congestion. One recent study from Italy corresponds with the findings from Gordon et al. It shows that the formation of a sub centre would enhance the probability of finding a job near the home. This in turn, allows a decrease both in workers' commuting distances and travel times (Veneri 2010).

This contrasts with some empirical studies show that polycentric development, dispersed metropolitan structures and suburbanization barely ameliorate the urban congestion phenomenon in metropolitan areas and indeed, actually increase workers' longer commuting distances and travel times (Cervero & Landis 1991; Levinson & Kumar 1994; Naess & Sandberg 1996; Cervero & Wu 1998; Aguilera 2005).

In research on submarket analysis of the San Francisco Bay Area, Cervero and Landis (1991) compared two subgroups of workers depending on whether their housing location at the time of job relocation was located either in the downtown area (i.e. city centre) or a suburb. The first sub group were those workers whose jobs moved from the downtown area but who retained a central city home address. Thus their commuting pattern changed from a central city commute to a downtown to suburb commute. With job relocation, the average commuting distance increased 477% and average trip duration increased by 75%. Another sub group are suburban workers whose housing was relocated to the suburbs. Generally, the results were that average commuting distances almost doubled, and commuting travel times

were also much more the same as before. And in further research, Cervero and Wu (1998) adopted two indices namely average one-way commute distance and average one-way commuting durations to examine the relationship between employment centres' growth and workers' commuting patterns during the 1980s. He found that among all 22 employment centres in the San Francisco Bay Area, from 1980 to 1990, average one-way commuting distances rose 12% and average one-way commuting time increased by 5%. These results show that, contrary to the co-location hypothesis, dispersed urban structure has not been related with shorter average commuting distances and time. In another similar study regarding how urban dispersion impact commuting patterns in U.S. metropolitan areas, after analysis detailed personal travel surveys data which were conducted by the Metropolitan Washington Council of Governments, it indicated that metropolitan Washington region's average work to home travel distance had increased from 6.6 miles in 1968 to 8.2 miles in 1988. The researcher thus supposed that the phenomenon of dispersion caused increase of commuting distance (Levinson & Kumar 1994).

Besides U.S. empirical studies, investigation of cities in Europe have also reached similar conclusions. Research of six companies in Greater Oslo, Norway showed that the distance from downtown Oslo to the workplace independently influenced the work commuting distance when other variables such as commuter train accessibility stayed constant. The further that companies were away from downtown Oslo, the longer the average commuting distance became. Analysis of data showed that when the distance from a company to downtown Oslo rose from 2 km to 12 km, the average work commuting trip increased from 10.5 km to 12.4 km. This study of the long-term effect of job relocations within Oslo's metropolitan area shows the obvious rise in average commuting trip length of a job location moving to the urban periphery (Naess & Sandberg 1996). A study based on census data of French metropolitan areas (Paris, Lyon and Marseille) in 1990 and 1999 showed that co-location hypothesis only can affect a minority of residents, of whom there were fewer in 1999 than there were in 1990. The majority of workers living in a sub-centre worked outside their sub-centre of living. This phenomenon was even more severe in 1999 than nine years earlier. In other words, the majority of jobs located in sub-centres are occupied by non-residents. Consequently the average distance of commuters increased during the past decade (Aguilera 2005).

4. The Role of Changing of Jobs-housing Relationship

From supporters of monocentric structure in above section, one key viewpoint of them is that polycentric development is associated with employment decentralization, and would easily create a jobs-housing imbalance within a given geographic area. Such an imbalance would cause rising transportation congestion and workers' commuting duration in metropolitan areas.

Accordingly, some urban and regional planners are turning to the jobs-housing relationship as a planning tool for seeking remedies for growing urban congestion phenomenon. And the concept of 'jobs-housing balance' has also become an urban policy in some local governments (Cervero 1996). Some scholars argued that jobs-housing imbalance is a key reason explaining how the problems of metropolitan congestion are induced and suggested that the government adopt policy to improve urban mobility. Cervero (1989) investigated cases of Chicago and San Francisco before confirming that two issues namely the high housing costs and housing shortages of suburbs were key reasons for suburban workers' longer commuting distance. In particular, many low income workers were excluded from the local residential market because of high housing prices. Moreover, data from 42 major sub-centres in metropolitan areas of the U.S. indicated that suburban job locations with jobs-housing imbalances tended to generate a low proportion of pedestrian and cycling trips and high levels of congestion on linking highways. Thereby, he suggested local governments adopt policies for reducing jobs-housing mismatches to improve regional mobility.

There were some other empirical studies to certify Cervero's opinion. Frank and Pivo (1994) revealed that both workers' commuting distance and time of jobs-housing balance's areas are less than that of imbalanced areas based on a case study of central Puget Sound Region of Washington State. On the aspect of commuting distance, the average distance of work trips ending in balanced areas was 29% shorter than that of ending in unbalanced areas. They also found that balance reduced workers' average trip time. The average time required for journey to work to balanced areas was 24% less than that of to unbalanced areas. Research by Ewing, Deanna and Li (1996) showed that locating jobs and housing in close proximity should rationalize patterns of commuting by reducing cross-haul travel. Research revealed that jobs-housing balance can reduce a region's vehicle miles travelled (VMT) by more than 15%. Another study using travel diary data from metropolitan Portland, Oregon, supposed that in areas with high accessibility to jobs, the average VMT was lower but trip frequency was higher (Sun, Wilmot & Kasturi 1998). Some more recent research done by Cervero & Duncan (2006) and Sarzynski et al. (2006) generated results consistent with the concept that jobs-housing proximity is inversely relevant to subsequent commuting time. And thus achieving jobs-housing balance is one of the most significant approaches that land use planning can contribute to decreasing commuting and congestion. There have been some jobs-housing balance policies launched by local governments for improving urban congestion phenomenon.

Wang and Chai (2009) conducted research from the view of China's housing reform to explore the relationship between commuting and jobs-housing balance in Beijing. They believed that jobs-housing imbalance has been become a main dynamic for congestion and air pollution issues in China's metropolitan areas along with China's economy and housing reforms. In Wang's research, after a data analysis of a household interview survey in Beijing in 2001, he found that Chinese '*danwei*' housing commuters have shorter commuting distance and duration as well as higher usage of non-motorized travel mode than those who live in housing obtained from the market sources. He believed that a good jobs-housing relationship may reduce travel demand and improve Beijing's urban environments. Accordingly, they believed that China's '*danwei*' housing reform and the market-oriented reforms induced a decrease of '*danwei*' housing and an increase of houses from market sources would deepen local jobs-housing imbalance and bring more severe urban congestion and pollution issues to China's mega cities.

Nevertheless, the concept of jobs-housing balance or co-location hypothesis remains greatly controversial. Critics of this view suggested that there were many other factors that caused the increase of urban congestion which is probably more significant than the jobs-housing imbalance. Jobs-housing relationship hardly influenced individual commuting behaviour (Giuliano 1991; Wachs et al. 1993; Giuliano & Small 1993; Scott, Kanaroglou & Anderson 1997; Levine 1998). Even jobs-housing balance policies possibly would generate subsequent urban issues (Levine 1995; Peng 1997; Bertaud 2003).

Some scholars argue that the link between where people choose housing and jobs is complicated, and may have little to do with job accessibility consideration. Insufficient evidence suggested that jobs-housing imbalance had vitally affected patterns of commuting. Furthermore, adopting a related policy of jobs-housing balance is not an effective way for reducing commuting in metropolitan areas.

Altshuler and Gomez-Ibanez (1993) think the implementation of jobs-housing balancing policies to be 'more of a romantic dream than a practical reality'. Giuliano and Small (1993) concluded that other factors must be more decisive for location choice than commuting expense, and that policies whose purpose is to change the jobs-housing balance will weakly affect commuting. Wachs et al. (1993) supported Giuliano's opinion. They supposed that workers' choice on housing location were based upon considerable factors besides the jobs-

housing relationship, such as the quality of neighbourhood and educational facilities and perceived safety. Their empirical studies also added credence to the arguments of those who doubt the effectiveness of policy proposals which encouraged changing the jobs-housing relationship as a principal policy for the release of urban congestion.

Based on a case study of Minneapolis Metropolitan Area, Levine (1998) certified that there was the potential for jobs-housing balance to change housing locations, but the potential was obviously restricted. Commuting time remained a dominant factor for determining housing location at the regional scale. The provision of affordable housing near employment centres can affect the choice of housing location for the households with low-to-moderate income and single-worker. But achieving a jobs-housing balance has hardly achieved releasing traffic congestion. Another study utilised aggregate data of measuring areas to examine the relationship between jobs and housing in the Portland, Oregon metropolitan area, found that it was only in greatly imbalanced neighbourhoods, in particular job-poor communities, where average VMT per capita was high. Accordingly, researcher argued that land-use policies for balancing jobs and housing, which targeted extremely jobs-poor and housing-poor areas, only had an impact on a very small part of the metropolitan area and thus the influence of the policies were very restricted in influencing the overall commuting patterns in the region. Researcher also concluded that changing the jobs-housing ratio is hard due to barriers from local authorities' land-use policies (Peng 1997).

Moreover, some scholars believed that jobs-housing balance strategy was not only ineffective in reducing commuting time and distance in metropolitan areas, but would also induce more urban problems such as urban sprawl and labour market fragmentation (Levine 1995; Peng 1997; Bertaud 2003). Bertaud (2003) commented influence of jobs-housing balance policy for urban development from an economics view. He argued that some scholars of urban studies often assumed that in polycentric cities, jobs-housing balanced communities were likely to grow around an employment cluster. Accordingly, considerable jobs-housing balanced economic clusters would then integrate a large polycentric city and in this kind of metropolis, workers' commuting trips would be very short. However, such a concept of metropolitan structure would conflict with the classical theory for the existence and continuous growth of metropolitan areas and ultimately caused labour market fragmentation.

5. Conclusion

The findings of advocates of monocentric structure as previously discussed, one common and significant viewpoint is that both urban dispersion and polycentric development are associated with employment decentralization, which would easily create a jobs-housing imbalance within a given geographic area. Such an 'imbalance' would lead to increasing trip commuting distances and time in metropolitan areas. Conversely, some scholars argued that sub-centres or given geographic areas of a polycentric or a dispersed city provide sufficient housing choices and jobs that are matched in both quantity and quality (when measured by their social-economic characteristics), then these areas could be considered as 'balanced' thereby resulting in workers selecting residential locations as close to their jobs' location as possible. Some economists doubted the need for public policies that promote jobs-housing balance and believed that government intervention may cause labour market fragmentation. They argued that over time the 'natural processes' of the market has the capacity to balance jobs and housing without government intervention (Bookout 1990). Imbalances are supposedly 'self-correcting' phenomena (Altshuler and Gomez-Ibanez 1993). However, crucial studies certified that government intervention and institutionally influenced jobs-housing balance do play a positive role in reducing commuting in polycentric metropolitan areas of both the United States and China (Weitz 2003; Zhao, Lu & Roo 2011).

In addition to the jobs and housing relationship, some other factors such as mixed land use, residential densities, regional policy as well as improvements of transport infrastructure and services appear to influence commuting patterns in a polycentric city. On one hand, in the dispersed cities of developed countries, mixed land uses and residential densities of sub centres and suburbs play a role in influencing commuting distances. On the other hand, managed and planned polycentric urban structure whereby urban growth is directed towards dispersed activity centres could potentially reduce commuting trip distances and time (Dieleman, Dijst & Burghouwt 2002; Buliung & Kanaroglou 2006; Zhao, Lu & Roo 2011a). In particular, some empirical studies show that regional policies and improvements of transport in a polycentric city would have an effect on people's commuting trip patterns (Alpkokin et al. 2008; Zhao, Lu & Roo 2011a). The argument in this regard, is that commuting trip distances could potentially be substantially reduced due to improvements in transport infrastructure and services that serve the sub centres of polycentric cities. Furthermore, a polycentric city in which all of its centre nodes are networked would provide greater overall metropolitan trip efficiencies through a networked transit infrastructure than could be achieved with a monocentric focused transit network. Crucially, regional policies can also play a significant role in reducing commuting distances via the supply of various types of housing that would be beneficial for optimising the ratio of jobs-housing balance.

Notes

1. *Danwei* is a generic term denoting the socialist working place in China (Bray 2005). Apart from salary, danwei used to provide workers a comprehensive package of welfare including housing (Chai 1996). Before the launch of economic reforms, danwei were encouraged to become self-sufficient communities within the city, providing not only work, but also housing, health care, food distribution and other social services (Gaubatz 1999).

References:

Aguilera, A 2005, 'Growth in Commuting Distances in French Polycentric Metropolitan Areas: Paris, Lyon and Marseille', *Urban Studies*, vol. 42, no. 9, pp. 1537–1547.

Alpkokin, P, Cheung, C, Black, J & Hayashi, Y 2008, 'Dynamics of Clustered Employment Growth and Its Impacts on Commuting Patterns in Rapidly Developing Cities', *Transportation Research Part A: Policy and Practice*, vol. 42, no. 3, pp. 427–444.

Altshuler, AA & Gomez-Ibanez, JA 1993, *Regulation for Revenue: The Political Economy of Land Use Exactions*, Brookings Institution, Washington, D.C.

Bertaud, A 2003, *The Spatial Organization of Cities: Deliberate Outcome or Unforeseen Consequence?*, *World Development Report 2003: Dynamic Development in a Sustainable World*, World Bank.

Bertaud, A 2009, *Urban Spatial Structures, Mobility and the Environment*, World Bank, Washington DC.

Bookout, LW 1990, 'Jobs and Housing: The Search for Balance', *Urban Land*, vol. 49, no. 10, pp. 5-9.

Bray, D 2005, *Social Space and Governance in Urban China: The Danwei System from Origins to Reform*, Stanford University Press, Stanford.

Buliung, RN & Kanaroglou, PS 2006, 'Urban Form and Household Activity-Travel Behavior', *Growth and Change*, vol. 37, no. 2, pp. 172-199.

Cervero, R 1989, 'Jobs-Housing Balancing and Regional Mobility', *Journal of the American Planning Association*, vol. 55, no. 2, pp. 136-150.

Cervero, R & Landis, J 1991, *Suburbanization of Jobs and the Journey to Work*, Department of City and Regional Planning, University of California at Berkeley, Berkeley, CA.

Cervero, R 1996, 'Mixed Land-Uses and Commuting: Evidence from the American Housing Survey', *Transportation Research Part A: Policy and Practice*, vol. 30, no. 5, pp. 361-377.

Cervero, R & Wu, K-L 1998, 'Sub-centring and Commuting: Evidence from the San Francisco Bay Area, 1980-90', *Urban Studies*, vol. 35, no. 7, pp. 1059-1076.

Cervero, R & Duncan, M 2006, 'Which Reduces Vehicle Travel More: Jobs-Housing Balance or Retail-Housing Mixing?', *Journal of the American Planning Association*, vol. 72, no. 4, pp. 475-490.

Chai, Y 1996, 'Danwei-centered Activity Space in Chinese Cities – A Case Study of Lanzhou', *Geography Research*, vol. 15, no. 1, pp. 30-38.

Dieleman, FM, Dijst, M & Burghouwt, G 2002, 'Urban Form and Travel Behaviour: Micro-level Household Attributes and Residential Context', *Urban Studies*, vol. 39, no. 3, pp. 507-527.

Ding, C 2007, *Urban Spatial Planning: Theory, Method and Practice*, Higher Education Press, Beijing.

Ewing, R, Deanna, M & Li, S-C 1996, 'Land Use Impacts on Trip Generation Rates', *Transportation Research Record*, vol. 1518, pp. 1-6.

Frank, LD & Pivo, G 1994, *An Analysis of Relationships Between Urban Form (Density, Mix, and Jobs: Housing Balance) and Travel Behavior (Mode Choice, Trip Generation, Trip Length, and Travel Time)*, Washington State Transportation Center (TRAC), University of Washington, Seattle.

Garreau, J 1991, *Edge City: Life on the New Frontier*, Doubleday, New York.

Gaubatz, P 1999, 'China's Urban Transformation: Patterns and Processes of Morphological Change in Beijing, Shanghai and Guangzhou', *Urban Studies*, vol. 36, no. 9, pp. 1495-1521.

Giuliano, G 1991, 'Is Jobs-Housing Balance a Transportation Issue?', *Transportation Research Record*, no. 1305, pp. 305-312.

Giuliano, G & Small, KA 1993, 'Is the Journey to Work Explained by Urban Structure?', *Urban Studies*, vol. 30, no. 9, pp. 1485-1500.

Gordon, P & Wong, HL 1985, 'The Costs of Urban Sprawl: Some New Evidence', *Environment and Planning A*, vol. 17, no. 5, pp. 661-666.

Gordon, P, Kumar, A & Richardson, HW 1989, 'The Influence of Metropolitan Spatial Structure on Commuting Time', *Journal of Urban Economics*, vol. 26, no. 2, pp. 138-151.

Gordon, P, Richardson, HW & Jun, M-J 1991, 'The Commuting Paradox Evidence from the Top Twenty', *Journal of the American Planning Association*, vol. 57, no. 4, pp. 416-420.

Gordon, P & Richardson, HW 1997, 'Are Compact Cities a Desirable Planning Goal?', *Journal of the American Planning Association*, vol. 63, no. 1, pp. 95-106.

Guth, D, Holz-Rau, C & Maciolek, M 2009, 'Employment Suburbanisation and Commuter Traffic in German City Regions', 9th Swiss Transport Research Conference, Ascona, September 9-11.

Horner, MW 2004, 'Spatial Dimensions of Urban Commuting: A Review of Major Issues and Their Implications for Future Geographic Research', *The Professional Geographer*, vol. 56, no. 2, pp. 160-173.

Ingram, GK 1997, *Patterns of Metropolitan Development: What Have We Learned?*, World Bank - Operations Evaluation Department (OED).

Levine, J 1995, 'Land Use Solutions to Transportation Problems? Rethinking Accessibility and Job-Housing Balancing', Paper presented at the 37th Annual Conference of the Association of Collegiate Schools of Planning, Detroit, MI. United States 19-22 October.

Levine, J 1998, 'Rethinking Accessibility and Jobs-housing Balance', *Journal of the American Planning Association*, vol. 64, no. 2, pp. 133-149.

Levinson, D & Kumar, A 1994, 'The Rational Locator: Why Travel Times Have Remained Stable', *Journal of the American Planning Association*, vol. 60, no. 3, pp. 319-332.

Levinson, DM 1998, 'Accessibility and the Journey to Work', *Journal of Transport Geography*, vol. 6, no. 1, pp. 11-21.

Naess, P & Sandberg, SL 1996, 'Workplace Location, Modal Split and Energy Use for Commuting Trips', *Urban Studies*, vol. 33, no. 3, pp. 557-580.

Nowlan, DM & Stewart, G 1991, 'Downtown Population Growth and Commuting Trips: Recent Experience in Toronto', *Journal of the American Planning Association*, vol. 57, no. 2, pp. 165-182.

Peng, Z-R 1997, 'The Jobs-Housing Balance and Urban Commuting', *Urban Studies*, vol. 34, no. 8, pp. 1215-1235.

Sarzynski, A, Wolman, HL, Galster, G & Hanson, R 2006, 'Testing the Conventional Wisdom about Land Use and Traffic Congestion: The More We Sprawl, the Less We Move?', *Urban Studies*, vol. 43, no. 3, pp. 601-626.

Scott, DM, Kanaroglou, PS & Anderson, WP 1997, 'Impacts of Commuting Efficiency on Congestion and Emissions: Case of the Hamilton CMA, Canada', *Transportation Research Part D: Transport and Environment*, vol. 2, no. 4, pp. 245-257.

Sultana, S 2002, 'Job/Housing Imbalance and Commuting Time in the Atlanta Metropolitan Area: Exploration of Causes of Longer Commuting Time', *Journal of Urban Geography*, vol. 23, no. 8, pp. 728-749.

Sun, X, Wilmot, CG & Kasturi, T 1998, 'Household Travel, Household Characteristics, and Land Use: An Empirical Study from the 1994 Portland Activity-based Travel Survey', *Transportation Research Record*, vol. 1617, pp. 10-17.

Veneri, P 2010, 'Urban Polycentricity and the Costs of Commuting: Evidence from Italian Metropolitan Areas', *Growth and Change*, vol. 41, no. 3, pp. 403-429.

Wachs, M, Taylor, B, Levine, N & Ong, P 1993, 'The Changing Commute: A Case-study of the Jobs-housing Relationship over Time', *Urban Studies*, vol. 30, no. 10, pp. 1711-1729.

Wang, D & Chai, Y 2009, 'The Jobs-housing Relationship and Commuting in Beijing, China: the Legacy of Danwei', *Journal of Transport Geography*, vol. 17, no. 1, pp. 30-38.

Weitz, J 2003, *Jobs-housing Balance*, American Planning Association.

Zhao, P, Lu, B & Roo, Gd 2011, 'Impact of the Jobs-housing Balance on Urban Commuting in Beijing in the Transformation Era', *Journal of Transport Geography*, vol. 19, no. 1, pp. 59-69.

Zhao, P, Lu, B & Roo, Gd 2011a, 'The Impact of Urban Growth on Commuting Patterns in a Restructuring City: Evidence from Beijing', *Papers in Regional Science*, vol. 90, no. 4, pp. 735-754.

The Research of Farming and Livestock Development in the Area of Ili River Valley of Xinjiang Uygur Autonomous Region

Wei qi LIU, Xie CHEN

Jiangsu Institute of Urban Planning and Design, China

Abstract: this article analyses spatial political, economic and social contexts of successful of farming and livestock development in the area of Ili river valley (AoIRV). AoIRV is located on Xinjiang Uygur Autonomous Region (XUAR), where is a vital and historical agricultural area in this region. In the Context of 'Western Development Drive' of China, central government enhance the support for western region and cities continually. According to the 'XUAR 12th Five-Year Plan', the region governance and local authorise plan to improve modernisation of agriculture, especially on farming and livestock industries, that improve economic development and social regeneration. Yet, the local agricultural development still faces kinds of problems, such as lack of higher quality labours, extensive recourse using, developing farming structure and ecological pressure. This article bases on *the Urban System Planning of Area of Ili River Valley* and point out the urbanisation is the core strategy for the local development and resolution of current problems. The planning regulates the building of countryside resident settlements in order to create much more intensive urban-town system that lead urbanisation in this local area. The local urbanisation could not only offer higher quality public service, such as healthy service and education for local people, but also improve the qualities of labour and set up basis of service industry. Meanwhile this planning advises the spatial arrangement of agricultural industry for adjusting the industry structure based on local agricultural community. Furthermore it plans a sustainable agricultural manufacturing via spreading organic standard and environment friendly policy.

Key Words: Area of Ili River Valley, Farming and Livestock Development, Countryside Residents

1. Introduction

Xingjiang Uygur Autonomous Region (XUAR) locates at northwest of China and a drawback province for long time. In 2011, the Gross Domestic Product (GDP) of XUAR was 661bn Yuan, just one percent of GDP of China. In its economic structure, agricultural is a vital part of GDP. The agricultural industry contributed 17.2% GDP for XUAR, manufacturing industry and service industry contributed 48.2% and 34.0% separately (China Statistical Yearbook, 2011). Therefore, to enhance agriculture development situation was believed the first step for XUAR economic development. Therefore, central government supports agricultural development in XUAR strongly and comprehensively.

According to *Xingjiang Uygur Autonomous Region National Economy and Social*

Development 12th Five-Years Plan Outlines, local government planned to propose to utilize modern development concept to lead agricultural and livestock industry, utilize modern material conditions to equip agricultural and livestock industry, utilize modern science and technology to transform agricultural and livestock industry, utilize modern industry system to upgrade agricultural and livestock industry, utilize modern operation mode to impel agricultural and livestock industry. Meanwhile it continuously enhance agricultural and livestock industry level and overall level, greatly improve production efficiency and the income of farmers and shepherds, and facilitated XUAR's transmission from agricultural and livestock industry big regions to agricultural and livestock industry strong region. Take the promotion of modern agricultural and livestock products processing industry development as key breakthrough of the transmission from agriculture big region to agriculture strong region, and the realization of modern agricultural and livestock industry. Construct four huge platforms of information services, science and technology support, industry parks and agricultural products and processed products export sales. With leading enterprise as dependence, and cantered by cotton, grain and oil, fruits, animal by-products, regional feature agricultural products, vigorously develop agricultural products precision and deep processing industry of high scientific and technological connotation, high class, high added value. And form industry layout with south XUAR characterized by feature fruits precision and deep processing being given priority to, and north XUAR characterized by feature agricultural and side-line products and animal by-products precision and deep processing being given priority to.

This research based on *the Urban System Planning of Area of Ili River Valley* which is a part from supporting policies, and introduce the main methods of this planning on agricultural development in this area. This research will introduce the basic situation of natural resource and key issues of agricultural development firstly. Secondly, the main strategies of the planning are to upgrade the agricultural structure and improve the eco-technique in using of agriculture and livestock produce. Finally, the planning will solve the key issues and reality the strategies via several approaches. The planning construct seven producing bases for different agriculture productions in order to re-arrange the agriculture industry structure and the spatial layout. Meanwhile, the planning promotes the water-saving technique and spices of plant for reducing dependant of water by agriculture producing. Furthermore, planning adjusts the arrangement of rural resident's layout. The planner considers that the new town will be built that can improve the life quality of residents, increase the quality of labour and create a more intensive energy using life-style. Meanwhile, these new town will create thousands job opportunities in new service industry, such as tourism.

2. Background

2.1 Natural Resource

Ili River Valley is a "wet island" in the dry regions of Eurasia. There is vast territory, various species and resources, sufficient water, soil, light, and heat sources. The Valley is possessed with unique agricultural and livestock advantage and huge

potential. It used to be named as “Jiangnan beyond the Great Wall”. The water resource in Ili is rich. There are several rivers including Tekes River, Kashen River, Gongnaisi River, and Ili River. The annual volume of runoff of surface water reaches 16.7 billion cubic meters, accounting for 20% of total volume of runoff of XUAR. The water volume held per capital is 4 times of national per capital. It is of typical valley climate. The frost-free period is 103 days to 191 days. The annual sunshine hours are up to 2,992.3 hours. Such conditions are not only appropriate for the growth of stable crops such as wheat, corn, soybeans, oil, but also good for the planting of carious feature crops such as rice, sugar beets, potatoes, malting barley, vegetables, edible mushrooms, melon and fruit, red flower, processed tomato, processed peppers, herbs, and aromatic plants. In the same time, premium livestock such as XUAR fine-wool sheep, Ili horse, XUAR brown cow, China Merino fine-wool sheep, and Ili white hog are also nurtured.

2.2 Key Issues

Low labour efficiency of agricultural and livestock industry

In 2010, Ili River Valley thrice industry GDP proportion were 24.2:35.8:40.0. From the perspective of population employment structure, in 2010 there were 993 thousand employed workers, and the proportion of three industries employment were 56.0:12.6:31.4. The primary industry only created 24.2% economic contribution with 56% employment proportion. Hence, compared with secondary industry and tertiary industry, agricultural and livestock labour production level was relatively low, and the development of agricultural industrialization was lagged. In 2010, there were 444.4 thousand hectares of arable land in Ili, yet every agricultural labour only shouldered 11.11 Mu arable land. It was of huge distance in relation to developed countries and regions. For example, in 2007, every agricultural economically active person had 5.7 hectares (85.5 Mu) of arable land in Israel, equalling the total of 8 farmers in Ili. Therefore, the labour production level of farmers and shepherds in Ili River Valley has much room for improvement.

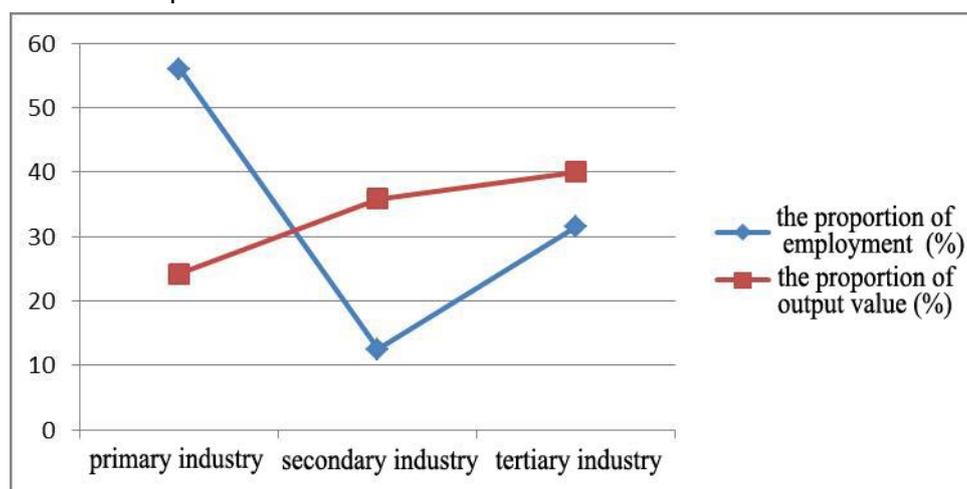


Figure 1: Ili River Valley Employment Proportion and Output Value Proportion Correlation Analysis (Xinjiang Statistical Yearbook, 2011)

Extensive agricultural water using

At present, China adopts irrigation method with water utility rate at 40% at maximum, 60% of the water is wasted. In Israel, irrigated lands commonly use pressure irrigation technology system, which reduces 50% to 70% of water consumption on unit land. This system delivers water via plastic tube and directly to the roots of plants where water is mostly needed. The maximum water utility rate is 95%. Israel has 420 thousand hectares of arable land and an annual usable water resource of 2 billion cubic meters. Agricultural water use accounts for 60% to 70% of all water consumption. The average agricultural irrigation water consumption is only 300 cubic meters. However, the average agricultural irrigation water consumption in Ili River Valley, XUAR, and eastern China is 700, 850, and 600 cubic meters respectively. Although the river valley regions has comparatively higher agricultural water utility rate in XUAR, it still has room of improvement when compared with eastern China regions and international level.

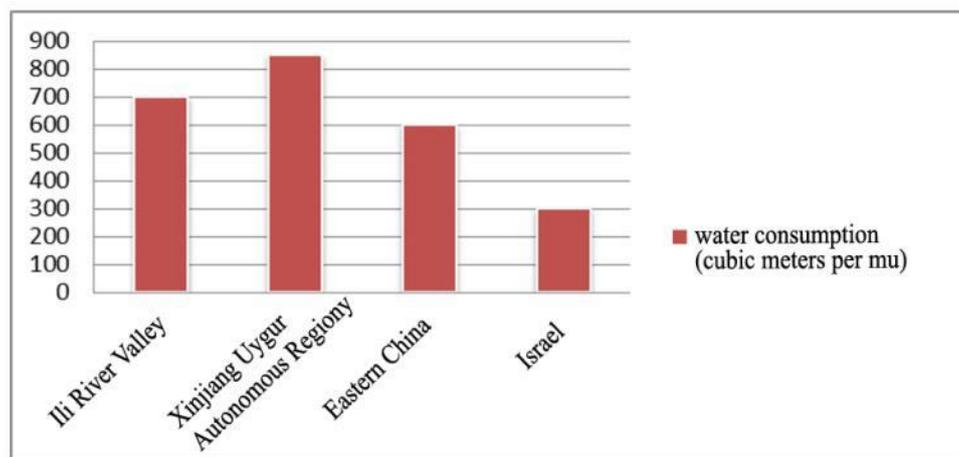


Figure 2: Agricultural Irrigation Water Consumption Comparison between Ili River Valley Region, XUAR, Eastern China, and Israel (Wang etc, 2010)

Insufficient technical training, low rural labour quality

In Ili River Valley, rural labour with education level lower than middle and primary school accounts for 40%, while those with middle and primary school education level account for 40%, and those higher than middle school education level only account for 20% (Selection data, 2012). The bilingual level is low, the ability to learn and grasp new knowledge and apply new technology is poor, and the concept is comparatively backward. Thus, agricultural labour technical level in river valley region cannot adapt to the needs of modern agricultural development. In particular, with the development of second industry and third industry in rural areas in recent years, the majority of young and educations peasants no longer stay for agricultural work. The knowledge level and agricultural technical application ability of those engaged in agriculture declines comprehensively. At the same time, most of the agricultural population is minority. Influenced by language barrier, their market competition recognition is poor, and ability to accept new technology is weak, which cannot live up to the demands of developing agriculture through science and education, accelerating the process of industrialization, and promoting high output, high quality, and high efficiency

agricultural development. The development of modern agriculture is significantly restricted.

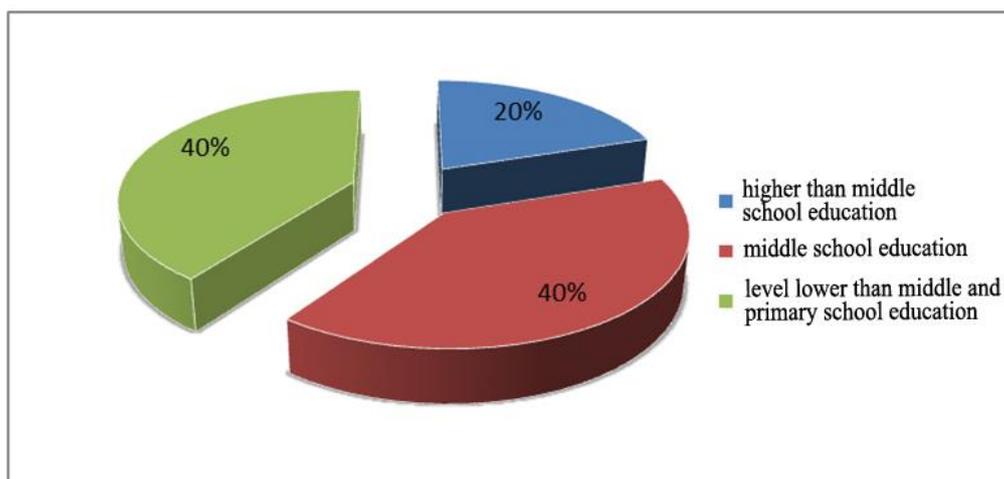


Figure 3: Ili River Valley Region Rural Labour Educational Level (Xinjiang Statistical Yearbook, 2011)

Week in Agricultural and Livestock Industry Cluster

In recent years, traditional industry in Ili River Valley, lead by agricultural and sideline products processing. In sugar refining, there are three enterprises in river valley, COFCO Sifang Sugar, COFCO Xinning Sugar, COFCO Xinyuan Sugar. The daily sugar beet processing amount is 25 thousand tons, the annual sugar beet processing amount is 2.5 million tons, and hence the annual sugar production capacity is 290 thousand tons. In fat processing, the river valley has formed production scale of 200 thousand tons of edible vegetable oil. In special fruit juice processing, there is extremely strong growth. In 2006, Ilite wild fruit juice processing project. Nongfushanquan was introduced to reorganize Huocheng county cherry plum production project. In dairy processing, by “the Eleventh Five-Years”, there were 29 dairy production enterprises in river valley, a number of comparatively large scale dairy enterprises, and a capacity of 30 thousand tons of industrial milk powder and casein on annual basis. Meat processing has become traditional advantage industry of Ili. Meat processing enterprises led by Bakouxiang industrial limited company have formed. In white wine processing, the production capacity in river valley regions has reached 35 thousand tons, holding 50% of total output of XUAR. In flax processing, the annual production is 150 thousand tons. Ili has become important base for flax industry in China. On the whole, agricultural and livestock products processing industry in Ili River Valley is still at its preliminary stage. Most of the agricultural and side line products processing projects do not have high added value. It is demanded to explore in aspects of deep processing and precision processing, to extend industry chain.

Increasing grassland vegetation degradation

Deterioration of grassland resource and environment is severely influencing the sustainable development of animal husbandry in Ili. 2.45 million hectares of

grasslands are resembling different levels of degradation, desertification, and salinization, accounting for 80% of utilizable grassland. By the end of 2010, the number of livestock had increased 3.5 times of that of initial post-liberation period. Affected by the policy of concentrating on agriculture while neglecting grazing in Cultural Revolution, newly reclaimed grassland at flatland, desert, piedmont hills with less than 300mm annual precipitation reached 200 thousand hectares. Therefore, 1 million standard livestock was reduced. Among the reclaimed 200 thousand hectares dry hill grassland, 83.3 thousand hectares of low production dry land had not been returned from farmland to woodland. In addition, in some area, phenomenon of arbitrary reclamation of grassland emerge constantly, which devastated grassland desertification and soil erosion. Pasturing area grassland, particularly Spring and Fall Grassland are severely overgrazed. The conflict between grassland and livestock is intensified. Plus, 350 thousand hectares of lands are suffering from frequent occurrence of drought and pest.

Table 1: Ili River Valley Region Grassland Grazing Capacity Statistics (Primary Data, 2011)

Grassland	Area (0'000 Mu)	Theoretical Grazing Capacity (0'000 Sheep Unit)	Actual Grazing Capacity (0'000 Sheep Unit)	Overloaded Grazing Capacity (0'000 Sheep Unit)
Summer Grassland	1517.10	887.22	1150.37	253.15
Spring and Fall Grassland	1263.45	338.99	485.13	146.14
Thermal Inversion Layer Warm Grassland	1254.90	559.63	629.48	69.84
Winter and Spring Grassland	583.05	132.08	228.01	96.11
Total	4618.50	1917.92	2492.99	565.24

3. Development Strategy

3.1 Strengthen local feature, build agricultural and livestock industry brand

Integrating resource, local authority will vigorously develop green agriculture, organic agriculture, and facility agriculture, and build distinctive Ili agricultural and livestock products brand, actively nurture feature agricultural and livestock products. Meanwhile, local authority could deepen export agricultural and livestock industry development. Moreover, considering the various characteristics of counties and cities, the local authority should help local enterprises to add value of agricultural and livestock products and increase regional reputation via precision and deep processing and improvement of local feature agricultural and livestock products, extend industry chain.

3.2 Transform production methods, realize economic breakthrough

The local authorities need to vigorously promote technologies of land saving, water saving, fertilizer saving, medicine saving, seed saving, and energy saving. Introduce water saving irrigation technologies appropriate for regional development. Energetically develop water saving agriculture, and effectively save water resource. Transform four-seasons grazing to winter point indoor feeding plus summer grassland grazing. Change the over-grazing condition of grassland. Strengthen the integration of frost and grassland to develop animal husbandry. Protect grassland ecology. Combine the project of “settle down and develop grazing, enable people to earn material gain and have stable living” to greatly perfect the living condition of farmers and shepherds, and improving the quality of life.

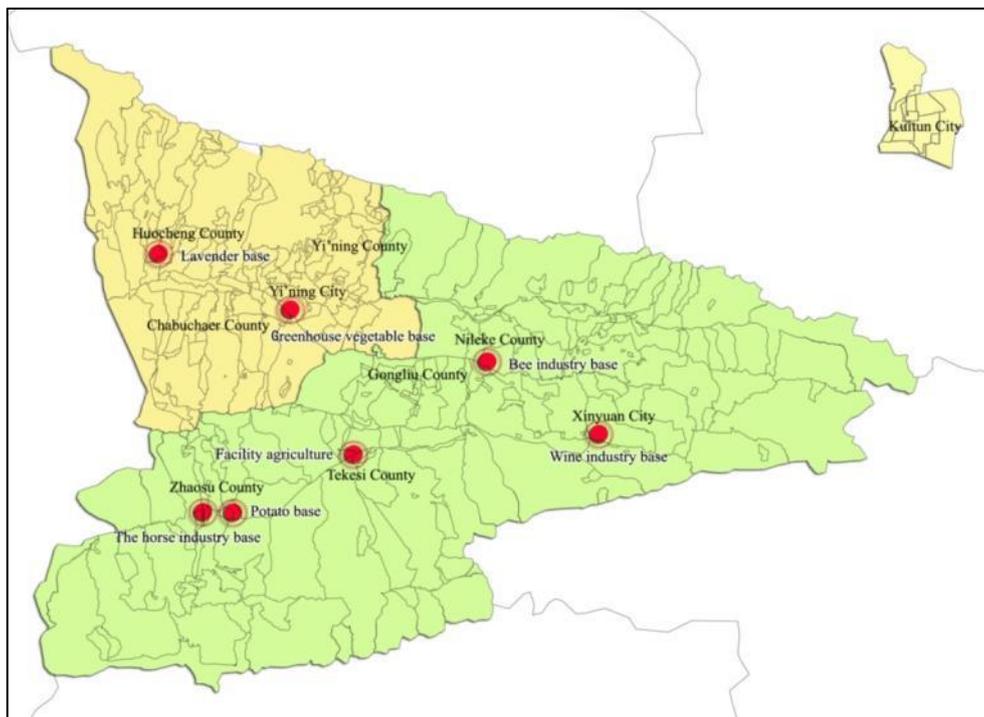
3.3 Implement developing agriculture through science and education, develop efficient agriculture

Local authorities should help the farmer to learn and use new eco-technique via raising the level of agricultural mechanization and automation, strengthen agricultural science and technology innovation.

4. Planning Strategy

4.1 Agricultural and Livestock Industry Development Layout

This agriculture industry planning will highlight the characteristics of agricultural and livestock industry development in Ili River Valley region, and set up “Seven Features Industry Bases”.



Pic 1: Seven Agriculture Industry Base in Ili River Valley Area

Seven Features Industry Bases: With Ili stud farm and Ili Zhaosu stud farm as core, radiate to horse industry bases in surrounding counties and cities; centered by Yi'ning city, take Yi'ning county, Cha county, Huocheng county as supplementary greenhouse vegetable production bases; centered by Huocheng county lavender base, build "Eastern Provence"; with Xinyuan city as the center, form wine industry base, build "No.1 county of XUAR white wine"; with Nileke county, Gongliu county at the heart, shape bee industry base; with Tekesi county as the middle, form facility agriculture base; take Zhaosu county as the core, form potato and rape bases.

Table 2: Ili River Counties Agricultural and Livestock Industry Features Table

Name	Agricultural and Livestock Industry Features	Main Agricultural and Livestock Industry
Yi'ning City	Greenhouse vegetable base	Greenhouse vegetable, dairy products
Kuitun City	—	Food processing
Yi'ning County	Apricot blossom village	Corn, wheat, soybeans, sugar beets, dairy farming, dried apricots
Chabuhaer County	Rice base, dairy products village	Rice, dairy products, feature greenhouse and vegetables, grain grinding, vegetable oil
Huocheng County	Eastern Provence	Flavors and fragrances, fat, health care products, apples, food deep processing
Gongliu County	Wild fruits village	Wild nuts, wild berries, wheat, soybean, oil sunflower, corn, bee industry
Nileke County	Black bee village	Bee products processing, bee culture display, beef and mutton processing, dairy products
Xinyuan City	White wine base	Feature food processing, animal by-products processing, brewing industry, sugar refining industry
Tekesi County	Facility agriculture	Greenhouse vegetables, bee industry, agricultural sideline products processing, food and manufacturing, fruit forest industry deep processing
Zhaosu County	Organic food, Pegasus village	rape, potatoes, garlic, beef and mutton processing, dairy products, Pegasus, brown cows

4.2 Water Saving

Adjust Plant Structure

The concept of plant structure adjustment is to limit the planting of crops with large amount of water consumption, and aim to obtain maximum economic benefit with minimum water resource. Take references from Israel, before the 1970s, the development of Israel depended on self-sufficient planting industry with the production of food. After the 1970s, the development of Israel depended on export planting industry with gardening. Peasants made a living by exporting. The adjusted plant structure demanded less of land and water resources, but increased the planning of

economical crops with higher requirements on science and technology. These crops could bring substantial economic income. Ili River Valley region should actively adjust agriculture plant structure, increase the planting of economical crops with less demands on land and water, and realize maximum economic benefits.

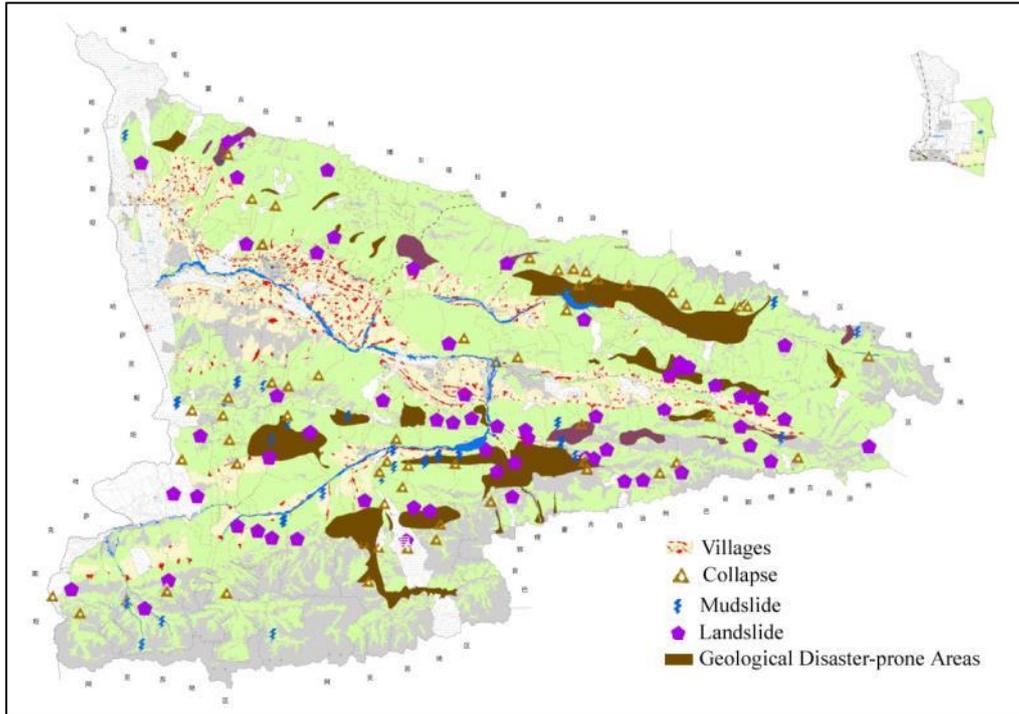
Support Water Saving Technology

Local authorities should pay much attention on promoting water saving tech in using of local agriculture producing. First of all, the investment should be paid on water saving infrastructure and help farmer to use them. Meanwhile the government implement relevant tax policies and finance policies to encourage local farmer to use water saving technique. Moreover, these policies should enhance agricultural scientific and technological innovation conditions, greatly increase agricultural scientific and technological investment, particularly water saving innovation, gradually improve agricultural research and development investment percentage in agricultural added value, and construct long-term and effective mechanism with stable increase in investment.

To Build Intensive Rural Residential Areas

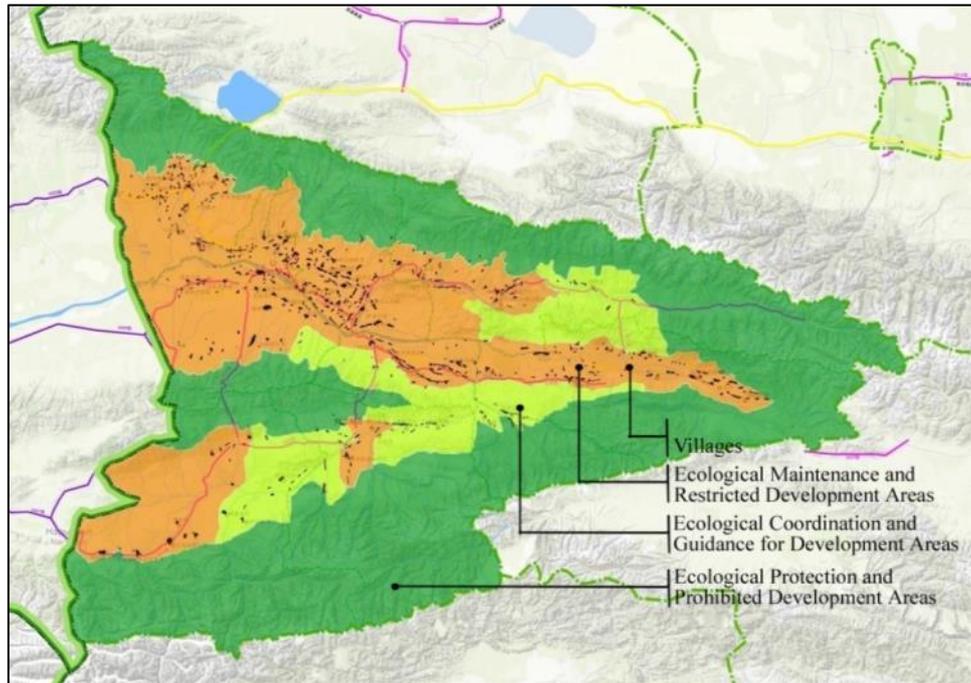
Improve the utility level of rural residential areas, speed up rural infrastructure construction and centre village construction, coordinate the arrangement of new rural area construction land, guide appropriate summon of rural residential areas, appropriately optimize space distribution.

(1) Avoid geological disaster-prone areas (spots): According to “XUAR Ili region geological disaster prevention and treatment planning”, geological disasters in Ili River Valley region mainly include the three types of collapse, mudslide and landslide. Geological disaster-prone areas are majorly distributed at Nileke county (mainly located at the mid-north part, in stripe shape, also sporadically incur in other places), Xinyuan county (mainly located at north-east part, and south mid and low mountainous areas), Gongliu county (mainly located at the south part, and cleugh), Tekesi county (mainly located at the south part, main cleugh and west-north part), Huocheng country (incur in small area, mostly at cleugh, in stripe shape, in G312 Guozigou section), Yi'ning county (incur in small area, in stripe shape, mostly in cleugh), Zhaosu county (mainly near the juncture with Tekesi at Qitemisigou). In future development, residential areas for farmers and shepherds should at the best avoid geological disaster-prone areas. In mid-and-low prone regions, rational avoidance and prevention measures are to be adopted.



Pic 2: Farmers and Shepherds Residential Areas Distribution and Geological Disaster-prone Areas (Spots) Overlapping Map

(2) Relocate villages at ecologically sensible regions: this plan to divide Ili River Valley into ecological protection and prohibited development areas, ecological maintenance and restricted development areas, ecological coordination and guidance for development areas. In ecological protection and prohibited development areas, protection of ecological space is of crucial importance. All exploration and construction activities that are harmful to ecology are prohibited. In the region, concentration is placed upon agricultural and livestock industry. Over grazing is controlled. Residential areas for farmers and shepherds should be placed at regions where ecological sensitivity is comparatively low and construction conditions are comparatively good. Rich natural resources and natural landscapes in the region should be fully utilized. Appropriate ecological travelling can be developed. Yet, travelling exploration utility strength is to be under control. The construction of tourism facilities should be in harmony with surrounding landscapes.



Pic 3: Farmer and Shepherd Residential Area Distribution and Ecological Function Partition Overlapping Map

4.3 Rural Labour

The development of agricultural and livestock industry is of significance to the development of national economy in Ili. Nevertheless, in the long period of development, irrational grazing had caused damage to grassland resources. Lagging agricultural technology led to the fact that a great number of peasants are engaged in agricultural production, which affected the process of regional economic development. therefore, it is planned to abide by the principle of “restore grazing with grassland, settle down people with grazing, develop agriculture with farmland”, to realize ration transfer of rural labour, and facilitate the speedy development of urbanization.

Studies show, the bearing capacity of Ili River Valley grassland under low utility rate, mid utility rate and high utility rate are 4,233.3 thousand, 4,491 thousand and 4,788.1 thousand sheep. Calculated at 100 sheep per shepherd, with grassland bearing capacity under high utility rate, 4,788.1 thousand sheep demand for approximately 50 thousand shepherds. In 2010, Ili River Valley had permanent resident population of 2,756 thousand, agricultural population of 1,590 thousand, among which shepherds account for 50,844 households and 258,836 persons, hence 100 thousand surplus labour can be displaced. Besides, with the continuously improvement in intensive operation level in agriculture, the every arable land of each agricultural economic activity will also increase. Calculated by 10 Mu arable land per capital, 650 thousand agricultural labour is needed, and hence 200 thousand surplus labour can be displaced. These farmers and shepherds can engage in agricultural and livestock products precession and deep processing industry, tourism, and feature catering industry, and offer reserve forces for urban second and third industry development.

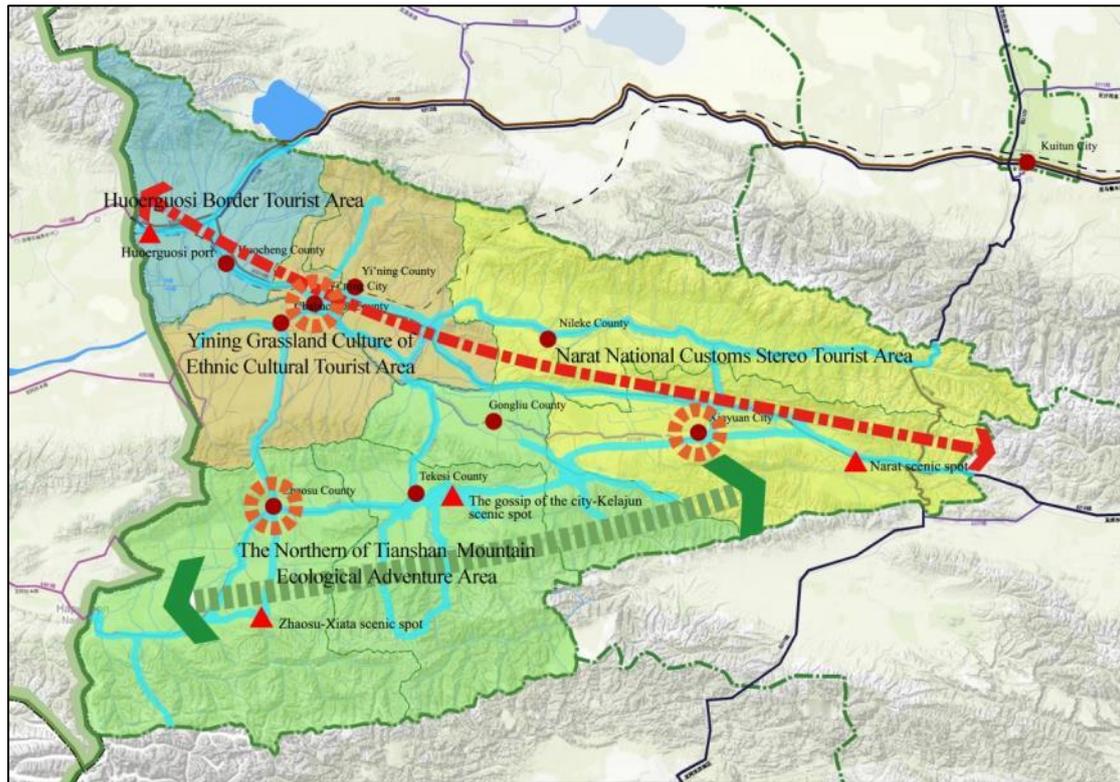
4.4 Rural Tourism

Through integration of various resources, create world level ecological valley tourism and leisure destination, build Ili River Valley brand, enrich the image of Ili River Valley tourist destination, enable Ili River Valley region to be leisure and tourist destination with distinctive features.

(1) Travelling and Shopping: Upon travelling routes setting, allocate feature streets and districts for the sales of feature tourism products, and offer souvenir for tourists, in order to expand the reputation for regional products. At the same time, provide employment opportunities for surplus labour, help farmers and shepherds increase their income. e.g. via promoting local food (Badanmu, jujube, dried apricots, nuts, honey, crusty pancake, etc.), agricultural processed products (lavender essential oil, mask, etc.), medicines and chemical reagents (deer blood wine series, lycopene, toadstool , bulb of fritillary, etc.) and crafts (tapestry, harness, wooden products, musical instruments), create feature tourism shopping base.

(2) Leisure on Farm: Through methods of home visiting to farmers and shepherds, enable tourists to feel the combination of local characteristics and exotic flirtatious expressions, nurture diversified feature tourism village. Via eating ethnic foods, dancing ethnic dances, living in ethnic houses, form interactions and affinity to local farmers and shepherds, enable tourists to sense the hospitality of local farmers and shepherds, increase sense of belonging of the tourists, improve local feature food reputation, e.g. roasted whole lamb, lamb skewers, noodles, cold noodles, bean jelly, crusty pancake, etc. further advertise ethnic feature food brands.

(3) Tourism Festival: In the aspect of tourism festival, there are Pegasus festival, and cycle racing on sands at the moment. And the festivals expected to develop are Baguacheng ecology festival, Ili Silu International Ethnic Cultural Festival. Via the set-up of Horse Cultural Festival, enable to tourists to have some understanding of the culture of horse through drinking horse milk, eating horse meat, riding on horse, racing horse. In addition, integrate horse jump performance and traditional customs activities, to expand impact, improve image, attract tourist, and increase benefits.



Pic 4: Structure Picture of Tourism Planning of Ili River Valley Area

5. Spatial Planning

5.1 Town-Rural Spatial Structural Planning

This planning will create “one circle, one pole, three development axis” spatial structure. Based on this spatial structure, local authorities will comfier the scale of urban in different level that will make relevant spatial policies and investment to support these urban physical construction and economic development.

“One Circle”

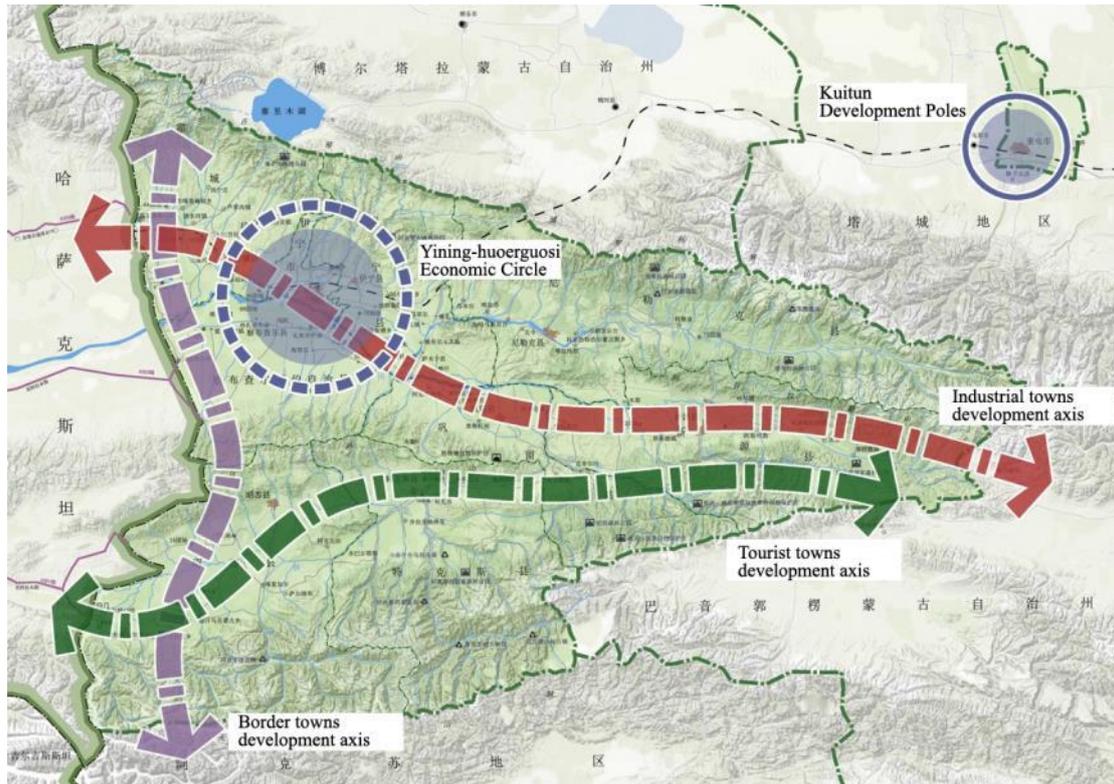
The Yining city will the core of this circle and the radius will be 100km that to growth an urban intensive development area which based on modern service industry and advanced manufactory industry. This circle area should be the biggest urban area which concentrate main function of urban, meanwhile, a more intensive land using principle introduce to land-using strategy that lead to building an spatial intensive urban area. This circle will be the core to promote Ili Region economic development

“One Pole”

One Pole means Kuitun development pole.

“Three development axis”

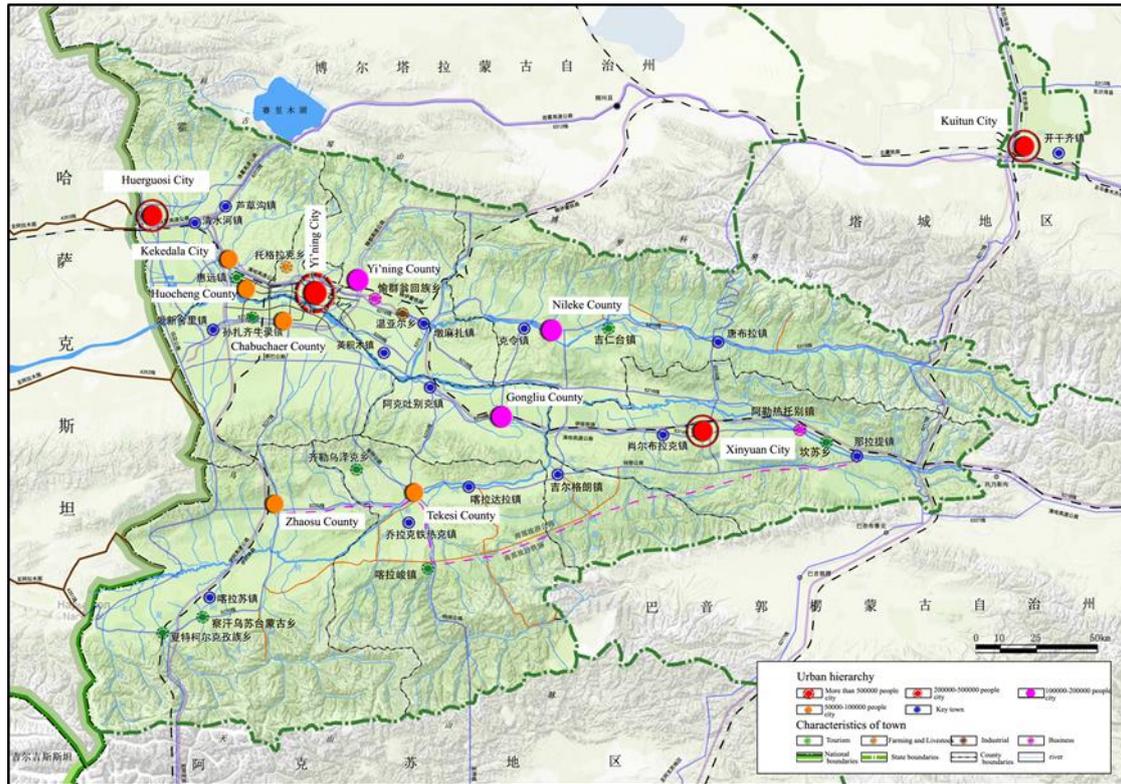
This planning sets three development axis which are *Northern Industry and Commeasure Town Development axis*, *Southern Tourist Town Development Axis* and *Western Border Town Development Axis*.



Pic 5: Ili Region Urban-Rural Structure Planning

5.2 The Urban Scale Levels

This planning set 5 levels for different urban scales which **centre urban, vice-centre urban, county, important town** and **common town**. While the end of Planning period, the centre urban could contain no more than 1 million people. And vice-centre urban will contain 500 thousand people. And there will be no more than 200 thousand people, 30 thousand people and 10 thousand people living in the **country, important town** and **common town** separately. Depend on the law of China urban and rural planning, this planning predicts and set the properly population for different urban in these different scale levels.



Pic 6: Structure Picture of Urban System Planning of Ili River Valley Area

5.3 The Rural Settlement Planning

The aim of rural settlement planning

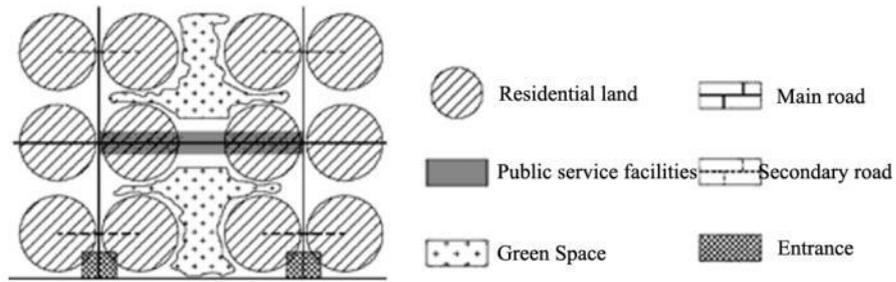
According to the prediction of population growth and urbanization trend in AoIRV by this planning, there will be still 12 million people to live in rural area, when the urbanization level maintain 70%. Therefore, rural are development will be the most vital contents for urban-rural area coherence development.

Thus, this planning sets intensive spatial polices that introduce farmer and herdsman to move in sentiments via infrastructure investment and urban construction. the main centre settlement will contain 300-500 houses and the based settlement will contain 50-200 houses. The this planning hope that all of farmer and herdsman can move into settlements till 2015, furthermore, Ili Region can build 1500 settlements with full function and which can meet anti-seismic standard.

The Model of Rural settlement

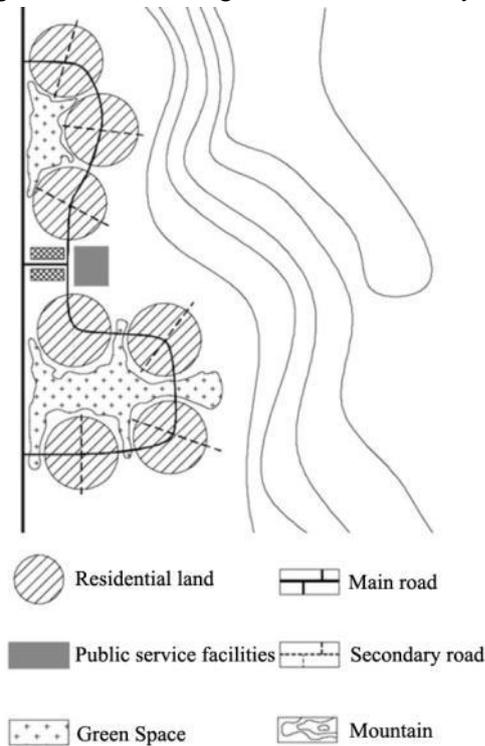
Depending on different geographic condition: This planning set three models of rural settlement as follow:

- 1): Suburban area: the large scale settlement will be built here with intensive building spatial structure. This settlement will be constructed closed to county or town, meanwhile, road and river will influence on this kind of settlement distribution.



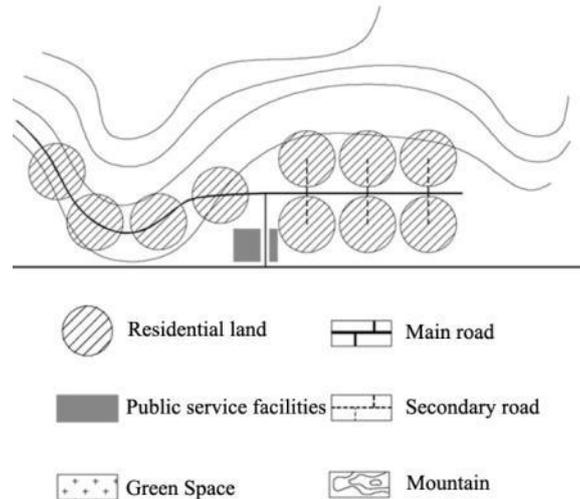
Pic 7: Model of settlement of Suburban Area

2): Road-side area: metro way is a big attractive for settlement. Comparing with model of suburban settlement, it contains less house for this model. Depending on the different conation of road, it is better to set these settlement just in one side, meanwhile, the planning controls the length of settlement by roadside.



Pic 7: Model of settlement of Road-side area

3): Hinterland area: because of poor condition of transportation and economic function, it will be difficult to spread the settlements in this area. The main principles of build this kind of settlement are closed to water resource spot and tourism spot, meanwhile, improving efficiency of resource using and reducing the construction cost.



Pic 8: Model of settlement of Hinterland area

6. Conclusion

This research pointed out the key problems faced by local agriculture and livestock development in Ili river valley area, which concentrate in three aspects. Firstly, the agriculture industry structure only offer primary produces. Current industry structure cannot add high value to their produces and cannot create high reputation of brand. Secondly, because of this primary industry structure, the style of resource using is extensive for long time. That leded a deep pressure on local environment, such as water resource and grassland resource. Finally, the recent urban-town structure cannot offer better public service, especially on public education. That could be a strong barrier for upgrading industry structure, improving value added produces and promoting environment friendly tech.

Therefore, *Urban System Planning of Area of Ili River Valley* implements relevant schemes in order to solve every single problem. First of all, the planning set seven industry clusters based on local special agriculture produces in spatial aspect in order to create unique local brand. Meanwhile, investment from government will pay for enhancing the industry chain that can increase the added value of local produces. Secondly, local authorities encourage the promotion of eco-tech using via investment, tax and governance ways. On the hand, there is a massive investment on irrigation infrastructure, on the other hand, the farmer and shepherd will be taught how to use the eco-tech, especially on water saving technique. Thirdly, of cause, the most directly scheme is to build new rural residents town. Via building intensive residents town, the resource using could be more intensive, and reduce the pressure on deterioration of grasslands. Meanwhile, it is easy to enhance the public education in order to improve quality of labour. Moreover, the industry of further processing on agricultural produces could be settle down based these new town that could extend current industry chain. Finally, new service industry, such as tourism, are emphasised by this planning.

References:

1. China Statistical Yearbook, 2011, National Bureau of Statistics of China.
2. Ili Kazakh Autonomous Prefecture Development Strategy Study, 2012, Jiangsu Institute of Urban Planning and Design.
3. Tan, Aihua. Li, Wanming. Xie, Fang. 2011, Study on the Successful Cases of Innovative Modes of Agricultural Technology, *Ecological Economy*, Vol 8 PP: 93 - 97.
4. Xiangjiang Statistical Yearbook, 2011, Department of statistics of Xiangjiang Uygur Autonomous Region.
5. Wang, Ronglian. Yu, jian. Zhao, Yonglai. Tian, jinxia. 2010. The main experience learned from Israel's agriculture development, *Water Saving and Irrigation*. Vol 5 PP61-63

Lisbon at a turning point: metropolitan patterns, trends and cultures

Sofia Morgado, João Rafael Santos, Inês Moreira, José Vargas
CIAUD – Faculty of Architecture, University of Lisbon, Portugal

(Important notice: this is a working paper; a first version was presented, not yet shared in text, at the AESOP-ACSP 2013 Conference, in Dublin, July)

1 Research outline: Lisbon as a metropolitan laboratory

The paper presents the overall structure and preliminary findings of the research project *Forms of metropolitan spatial production in Lisbon [1940-2011]*, currently developed by the team of M^{urbs} – metropolitan studies and forms of urbanization research group (Faculty of Architecture/ Technical University of Lisbon).

The research project stems from the opportunity to discuss recent metropolitan development under the light of new census data (2011) and of an on-going revision of regional and municipal plans. Thus, expected results are considered to adding new perspectives and further development to findings obtained in previous research. These previous experience includes a range of projects with subjects that span from the morphogenesis and development of metropolitan Lisbon, to comparative studies with other metropolises as well as the adaptability and sustainability of recent land-use policy instruments to managing urban change. A critical and conceptual update of the forms of urban production and territorial planning take into account innovative approaches, not only in metropolitan Lisbon, but also with regard to national and European trends.

Murbs – metropolitan studies and forms of urbanization research group is a research group (Faculty of Architecture/Technical University of Lisbon) with a focus in topics specifically related to metropolitan and urban space issues, including their morphologies, genesis and transformation processes, urban planning and spatial design.

The team gathers several researchers with previous expertise in these themes, especially in what the Metropolitan Area of Lisbon and comparative and multidisciplinary studies with other metropolises are concerned. Besides giving continuity to previous research activities, *Murbs* offers new challenges for future contributes to the scientific community.

The research project *Forms of metropolitan spatial production in Lisbon [1940-2011]* is seen as an opportunity to further develop previous findings and perspectives regarding Lisbon's metropolitan morphogenesis and development in comparative perspective with other 13 Southern European metropolises (George and Morgado, 2004), as part of the "*Explosion of the City Territorial Transformations in the South Europe Urban Regions - Ferrara, Venice, Genoa, Milano, Naples, Valencia, Donostia-Baiona, Vallès-Barcelona, Lisbon, Oporto, Montpellier and Marseille*" (coord Font, 2004). This research proposed a morphogenetic approach according to an identical periodization for all cities, the reading of the shapes and forms of the urban occupation, taking into consideration their dynamics and planning.

The research had as one of the major innovations the production of cartography at various time periods for each metropolitan area, which was published and exhibited in various cities involved. In the specific case of Lisbon, a digital and georeferenced cartographic database (scale 1:25000) was developed, including the buildings, the road and rail network, costal lines, topography and hydrography for 1940, 1965, 1992 and 2001. The urban occupation and land use was analyzed for these time periods, emphasizing an interpretative approach of the relationship between the urbanization phenomena, the census data

and the regional plans (both with publication dates close to the obtained official cartography).

The results from this first comparative study were an opportunity to participate in the project *Dinâmicas de Uso e Ocupação do Solo da Área Metropolitana de Lisboa 1940-2001* (Land Use Dynamics and Occupation in *Lisbon's Metropolitan Area 1940-2001*), developed under a protocol between the CCDR-LVT (Lisbon and Tagus Valley Regional Coordination and Development Commission) and the Faculty of Architecture of the Technical University of Lisbon.

Some members of this team were also involved in *Super Cities, Sustainable Land Use Policies for Resilient Cities* project (a comparison of five European metropolis, three of them Mediterranean; coord. Eraydin, EU, 2010), addressing the topic of the adaptability and sustainability of recent land-use policy instruments for managing urban change.



Figure 1. Birdseye view, Lisbon. Source: APL, nd.

2 Trends of change – responding to societal challenges

The metropolitan area of Lisbon reveals meaningful differences when compared to other European metropolises. The production of territorial features and urban fabrics into rather contiguous and continuous morphologies, upon which superimposed infrastructural and specialized land uses has often result in spatial disconnection and lack of legibility.

In this context, Lisbon offers a unique opportunity to address the emergence of specific forms of urban space production, related to a changing structural configuration, the stabilization of the national planning system and the shifting of urban policies towards regeneration and metropolitan-wide environmental structures.

Recent urban development issues are critically confronted with the impact of the economic and financial crisis situation, especially after the beginning of the financial assistance programme in 2011. Both long term and short term perspectives regarding urban development have been subject to reassessment and increasing uncertainty as to their feasibility. Conventional urban planning tools and formulas to foster

urban development are met with the collapse of a long established and growth-oriented real estate market.

As the Portuguese social and economic fabric fall into a new and still unpredictable state of unbalance and scarcity, a renewed focus on the living spatial conditions in the metropolis stands as a research commitment to societal development, not only in what Lisbon is concerned but also as a contribution to the theorizing of today's European urban condition.

Additionally, the research is in line with the vision of current European Societal Challenges, particularly those concerning the spatial, environmental and creative aware fields of society and policy.

3 From description to engaging challenges

The project aims to developing research on the topics: 1) Configurations and territorial trends in metropolitan Lisbon 1940-2011, with an emphasis on the 21st century; 2) Planning culture and planning system in Portugal, where Urbanism holds a representative role regarding the European context; 3) Questions and Debate: from metropolitan planning to metropolitan design.

New census data (2011) and an update of highly detailed cartographical representation of Lisbon metropolis are the background sources for outlining the socio-spatial characteristics of this new stage of metropolitan development.

The opportunity for the research project stems from this data as well as from the conceptual discussion and innovation regarding the spatial planning agenda, namely in a number of multi-level (national, regional and municipal) territorial and urban plans and guidance documents (e.g. Europe 2020).

As drivers for competitiveness in a globalized world cities and urban regions are at the core of current EU's policies. Accordingly, recent literature on European metropolises has critically explored the process of extended urbanization, regarding the understanding of such a specific and historically grounded urban condition as a step forward into the adjustment of the policy making, the spatial planning and the urban design.

A critical update on the urban production course of action and respective planning has been conducted, having in mind innovative approaches in the international panorama, as well as the identification of the contemporary trends in metropolitan Lisbon.

Exploring and renewing the conceptual framework regarding multilevel planning for the metropolis, over the last decade, under the scope of EU recommendations and National policies are also envisaged through: i) an outline of updated spatial configurations regarding Lisbon metropolis and its emerging morphologies; ii) a systematized identification of structuring fields for spatial and social cohesion in a fast changing context (i.e. infrastructures and open space systems); iii) a contribution to theorizing urban planning cultures and their adjustment in the face of economic and financial crisis and societal challenges.

4 Conceptual framework - changing fields in the metropolis

The location of the Metropolitan Area of Lisbon in the crossroads of remarkable Atlantic and Mediterranean landscapes contributes to its unique urban development, combining the access to the ocean and global trade and the potential of an inner sea – the Tagus Estuary – as a morphological and identity reference. Its territorial specificities and historic background give rise to characteristic forms of urbanization.

Literature and previous research about the westernmost European capital have shown the contours of leading processes of urban growth in different time periods of metropolitan development. Until mid-20th century by resorting to urban contiguity, then

by introducing spatial disjunction and functional specialization, as a reaction to modern city concepts. However, a third period starts evolving from the late 90's onwards, with characteristics which, so far, may only be sensed.

After three decades of public policies in a democratic political context, current planning in Portugal is gradually changing perspectives on priority areas and sectors. As major urban problems (slum clearance, housing, supply of basic infrastructure and facilities) had been tackled by local and national funding, planning priorities now focus on urban renewal, environmental protection and public space improvement.

Current urban planning – being developed simultaneously at metropolitan/regional and municipal levels – is targeting precisely key topics such as shrinking prevention and the urban and environmental qualification of former sprawl fabrics. Risk assessment, ecological networks and mixed uses associated to a more reticulate infrastructural network is now in the planning agenda. A stronger commitment to multi-level planning approaches, urban-landscape relationships, and to flexibility and resilience concepts is also foreseen in Lisbon's Municipal Master Plan (approved in August 2012).

Trends of change and innovation are also noticeable by analyzing recent patterns of urban occupation and statistical data. A complex mosaic of land uses associated to the knowledge economy, logistics and retail is emerging along with new patterns of urban shrinkage.

The sprawling drifts which characterized metropolitan development after the 1940's – following railroad and motorway suburban axes – are increasingly combined with transversal lines of settlement filling in the open spaces left in-between. These patterns include not only highly connective and specialized land uses – giving evidence to a polycentric system –, but also the spaces of everyday life – housing, working, studying, shopping.

Conversely, population loss and unbalances in the housing market became noticeable in areas other than old districts, increasing the complexity of shrinkage phenomena. Together, they are shaping the contour of what can be perceived as a new stage of metropolitan development.

However, the difficulty in defining a comprehensive conceptualization for the contemporary metropolis, has led many authors to come up with different and exploratory paths for decoding this type of urbanized landscape and in the fields of urban morphology (Font, 2007, Mangin, 2004), metropolitan landscapes (Tatom, 2009, Llop, 2009) and infrastructures (Graham and Marvin, 2001, Shannon and Smets, 2010). A state of *in-betweenness* (Sieverts, 1997) remains a sharp metaphor for the stage at which Lisbon and many European cities stand as they are faced with such unexpected and deep change in recent times.

In spite of representing ground breaking concepts in their context, these contributions to the decoding of contemporary critical fields still require further discussion. The issue is now how to bridge the cutting-edge trends of global urbanization with the reconstruction of an operative and conceptual common ground for intervening in clashing fabrics, such as today's southern European metropolises.

5 Methodology and lines of development

The team developed an update of specific cartography (based on official military charts M888 series/2009, scale 1:25000), resorting to previously tested methodology. This work preceded the exploring and renewal of the conceptual and critical framework regarding the forms and planning of metropolitan - spatial production, under the scope of relevant innovations in the Portuguese planning system.

Due to its specificity, in definition and time span, this cartography is considered both as a result – by extending a vision of a certain territorial development in time – and as a tool for further research in two dimensions: (1) contribution to the definition of a metropolitan design

and morphology, and inherent epistemology; (2) as a basis to share and to cross with other data, for instance, by resorting to GIS potentialities.

The cartographic production is complemented with the identification and classification of the metropolitan changes and its emergent morphologies, by combining a theoretical approach with the direct contact with the territory.

Thus, the territory will be examined according to different sorts of data which will include digital cartography and orthophotomaps analysis (in several scales), available plans and policies documents, statistical and economic data. The vectorial data includes different layers (buildings or blocks, infrastructures, public space and landscape cadastral information), adjusted to a local perspective in various dates in order to examine its morphogenesis and integration within larger metropolitan structural and functional patterns. Relevant data include statistics and planning tools joinable to cartography using CAD and GIS techniques to be displayed spatially, according to the time scope sequence.

The empirical approach is based on field work, analysis of official cartography / documents, statistical data and morphogenetic reading of three interconnected layers of the metropolitan fabric: infrastructures, filaments and the open space system. Thus, the analysis consists in the systematization of the dynamic process of transformation of the metropolitan landscape, by decomposing the relations established between these different elements, with the overall configurations, the demographic trends and the Portuguese planning system, focusing the last 20 years.

The research aims at tracking the contemporary city-making processes, patterns and challenges in metropolitan Lisbon, following three lines of development, which will further be crossed and worked to sort out transversal conclusions. These lines of development include four main fields: i) the patterns of change in the wake of crisis, scarcity and shrinkage; ii) the spatial structures for a smart and cohesive metropolitan landscape; iii) an update on a socially engaging urban planning and theoretical framework.

Although separated under the different layers, the analysis points out the impossibility of their decoupling and their influence on the overall system, inviting to a transversal reading of the various types of relationships established. Four contributions address these trends through the lens of i) infrastructural intermediation spaces; ii) metropolitan filaments; iii) from in-between to a designed open space system and iv) the urban shrinkage and its impacts at the local scale.

5.1 *Infrastructural intermediation spaces – metropolitan interfaces in Lisbon*

Considering emerging forms of spatial development associated to infrastructure in Lisbon metropolis in the last decade, a specific focus will highlight spaces where the recent improvement in mobility networks has rendered a very well connected and interfacial metropolitan fabric.

The last decade can be seen as stage of transition in Lisbon's metropolitan infrastructural strata to what it was called the layering of a connective fabric (Santos, 2012). This fabric is established through: 1) the multi-scalar recombination of various mobility, supply and communications networks; 2) the development of well-connected patches of urban development bridging or regenerating spatial and functional gaps in the metropolitan fabric; and 3) the introduction of landscape and intermodal interfaces in nodal spaces.

In the meantime, transformations at a local level in the city of Lisbon begin to be sensed as the underground system is expanded and connected to the railway, the airport, and to river and bus terminals in a number of new intermodal stations. Public space qualification and urban renewal projects start to be programmed in the areas adjacent to these new stations, taking a role in the framing of a better balanced and cohesive urban structure.

The emerging of a *connective fabric* as a metropolitan configuration is therefore being simultaneously being produced at various levels and through the recombination of transport links, spatial and landscape continuities and multifunctional urban facilities. Three areas in Lisbon show how this incrementally being achieved: the riverside threshold, the national and international mobility hubs of the airport and the main train station in *Oriente*, and the border spaces along CRIL – the first metropolitan ring motorway.

5.2 Metropolitan filaments

This approach to the urban fabrics and its morphogenesis focuses on a set of emerging urban morphologies, arising from processes of concentration of economic agglomerations specialized in the production, distribution and consumption in Lisbon's metropolitan territory, during the last 20 years.

The changes in the physical, economic and political context of the last twenty years have boosted the transformations in the metropolitan structure and the constitution of functionally specialized urban formations, which specific morphologies (*metropolitan filaments*). These are product of the metropolitan infrastructuring and densification, resulting in a system of areas of high concentration of economic activities related to the tertiary (and quaternary) sector and, in parallel, the abandonment and restructuration of large peripheral industrial areas.

The *metropolitan filaments* are the result of processes of great dynamism that, according to their nature and location, have their origins related the industrial fabrics established until the 70s, followed by the exponential growth of the tertiary sector during the 90s and the current presence and strengthening of the quaternary sector. The adaptation to the new demands of the knowledge society, along with the turn from an industrial to a services economy, was materialized in metropolitan Lisbon with the atomization and fragmentation of small/medium scale industrial and logistical activities through the territory, as well as the emergence of dense knowledge-intensive production or commercial clusters. A main feature of the genesis of the *metropolitan filaments* is the presence of an industrial structure as the engine that created the conditions for the establishment of subsequent activities. Although many of these factories are currently inactive, abandoned or converted, the logics supporting their morphology and location are still present in the territory in the dialogue with the (biophysical and anthropogenic) surroundings. The strategic location with regard to the physical support (topography, hydrography, wind and solar orientation, etc.), to the availability of land for occupation and connection to the infrastructural networks laid the foundations for the synergic relations with complementary activities that shape the contemporary urban formations.

The main objective is the identification of these specialized areas and their morphologies, revealing its transformation processes and determinant factors that shaped them, discussing their role in the metropolitan structure and how they can adapt and relate to their surroundings, in the current context.

5.3 Towards a designed open space system

On a wider scale, the main areas of concern focus on transition areas between dissimilar situations. On the one hand, it addresses the ambivalent characteristics of its fabrics, and, on the other, the need for a disciplinary approach that, in terms of projects, answers trans-scale situations and allows working in areas with scientific and conceptual borders that simultaneously encompass urbanism and landscape architecture.

Accordingly, and in the light of recent works, we are probably looking for projects that instead of attempting to mend urban splinters aim to reinvent a fabric composed

of many distinct pieces, conveying the city a territorial coherence through a public realm oriented structure of metropolitan characteristics (Morgado, 2012).

Fringe and splinters slashed the metropolitan support, sometimes in between highly qualified modern neighbourhoods and superposed with major infrastructures. Dereliction and social segregation opened unsuspected issues in modern and post-modern experiments.

However, since recent adjustments to a worldwide crisis have either frozen on-going important infrastructures or impelled the need for a greater proximity with the place. From kitchen gardens to urban parks: the unseen, unperceived, becomes the protagonist of the recovery, through the design of a collective system of open spaces.

These concerns raise the need to clarify the nature of current metropolitan fabrics, as they hold different qualities - from urban and infrastructural to rural and natural - and the indispensable skills to intervene in them. In this process, the growing importance of the space in-between cities is highlighted.

As a result, literature and practices keep on emphasizing the same topics:

- Open space is a key element for the full understanding of current metropolitan and urban morphogenesis and
- The most flexible design component in the articulation of different and scattered elements in the metropolis.

5.4 The urban shrinkage and its impacts at the local scale

Presently, Europe is facing both population decline (shrinkage) and ageing. Eurostat estimates that population decline is experienced in one quarter of the European regions, and it is expectable that the ratio would continue to grow in the near future. In the same way, the life expectancy is predicted to increase.

Although the highest percentage of younger residents can be found in Lisbon's Metropolitan Area (AML), the city of Lisbon is also one of the European capitals with higher percentage of population aged 65 years and over (65+). The already existing oversupply of dwellings, associated to a selective out-migration of younger households towards the city periphery, also lead to a change in the age structures in city centre (most residents are in the 65+ group age), housing vacancies and thus to a situation of underused urban infrastructures.

The demographic trends verified in AML are largely a consequence of a deficit of choices, once the possibility of choosing to live in the city over living in the suburbs shows less affordable for the middle class, who cannot find an adequate housing supply that would fit their economic capacity and housing demands. These trends are accompanied by a decrease in the household size and changes in its classical structure, resulting in a minor density and in the under-usage of dwellings and consequently in a higher per head consumption of housing space.

The housing, especially in the core city, is hardly affected by the population decline and high elderly population proportion. The cheap rental dwellings close to the city centre, mostly occupied with elderly residents due to inflexible rent control laws in effect between 1948 and 1985, and the inability of owners to rehabilitate their dwellings engaged in these low income rents, lead to a state of degradation in the buildings, to a decline of expenditure on maintenance and to a devaluation of the municipal parish property and quality of life. Both the physical deterioration of most of the buildings and urban amenities and the fact that they don't provide the requirements for actual housing standards led to an inner-city decline and depopulation in most of the metropolitan municipalities. (CML, 2009; CML, 2012)

6 Preliminary findings and perspectives for an on-going research

Over the last years, individual research lines (e.g. PhD and Post-doctoral research) have been building a multi-layered database, contributing to the identification of topics where “change” is critically acknowledged. Further developments will allow for a multifaceted synthesis, exploring plural and transversal findings.

The project is expected to render a synthesis regarding: 1) Configurations and territorial trends in metropolitan Lisbon 1940-2011, with an emphasis on the 21st century; 2) Planning culture and planning system in Portugal, where Urbanism holds a representative role regarding the European context; 3) Questions and Debate: from metropolitan planning to metropolitan design.

The research has also been a field to develop a network with a wide spectrum of debate. This includes different approaches from field work to design workshops, publications and development of bonds with several university and research teams, in partnership with municipal and central government authorities, or even under the scope of Thematic Groups and Teams within AESOP and ISOCARP, amongst others.

The project has been a common ground for crossing several lines of research which share Lisbon metropolis and its contemporary condition as its field of study. In its current stage, it has already allowed for a deeper understanding of Lisbon’s emerging forms of spatial production, not only from the statistical and spatial data already developed, but from the opportunities for inquiring into societal changes currently perceived as critical in the face of uncertainty and scarcity.

Besides the dissemination and debate of the research findings, resorting to publications, participation and organization of international seminars and workshops, the project *Forms of metropolitan spatial production in Lisbon [1940-2011]* and *Murbs* multidisciplinary activities are an opportunity to constitute ground-breaking knowledge by contextualizing a reality only sparsely perceived as a wider phenomenon.

The contributions and expertise of the different team members allow for a intertwined link with planning education and scholarship, namely through: 1) the development of theoretical units at PhD level concerning metropolitan territories; 2) the organization of design studios and advanced research workshops aimed at doctoral and master level candidates; 3) the contribution to already concluded post-doctoral research and doctoral theses of team members and 4) the contribution to on-going doctoral theses by team members.

These results are expected to give rise to social externalities, allowing for innovation and debate in the academic field as well as in local and national public administration.

References:

CML, (2009) “Carta Estratégica de Lisboa 2010-2024”, “Relato da pergunta 1 – Como recuperar, rejuvenescer e equilibrar socialmente a população?”, Lisbon

CML, (2012) “Programa Local de Habitação de Lisboa - Relatório Final do PLH”, Lisbon

Eraydin, A. & Tasan-Kok, T., ed. 2013. Resilience Thinking in Urban Planning, New York, Springer-Verlag

Font, Antoni (ed.) (2007), L'explosió de la ciutat: morfologies, mirades i mocions sobre les transformacions territorials recents en les regions urbanes de l'Europa Meridional, Madrid, Ministerio de Vivienda

George, Pedro; Morgado, Sofia (2007), “Área Metropolitana de Lisboa 1975-2001. ‘De la monopolaridad a la matricialidad emergente’” in: Font, A. (ed.), La explosión de la ciudad. Transformaciones territoriales en las regiones urbanas de la Europa Meridional, Madrid: Min. de Vivienda

Graham, Simon; Marvin, Stephen (2001), Splintering urbanism: networked infrastructures, technological mobilities and the urban condition, London: Routledge

Llop, Carles (ed.) (2009), Paisatges en Transformació: intervenció i gestió paisatgístiques, Barcelona: Diputació de Barcelona

Mangin, D. 2004. La ville franchisée: Formes et structures de la ville contemporaine, Paris: Editions de la Villette

Morgado, Sofia (2012), “Transformação, segregação e projeto de um espaço limítrofe” in: Marcello Magoni, ed, Cooperare attraverso l’Atlantico. Analisi, strategie e progetti per la riqualificazione dei margini urbani nei paesi latini europei e americani, Milão: Libreria CLUP. 236 pp./63-74 pp

Santos, João Rafael (2012), Spaces of infrastructural mediation: Interpretation and design in the production of the urban in the metropolitan territory of Lisbon, PhD Thesis in Urbanism, Faculty of Architecture, Technical University of Lisbon

Sieverts, Thomas (2003), Cities without cities: an interpretation of the Zwischenstadt, New York: Spon Press

Shannon, Kelly; Smets, Marcel (2010), The Landscape of Contemporary Infrastructure, Rotterdam: NAI Publishers

Tatom, Jacqueline; Stauber, Jennifer (ed.) (2009), Making the Metropolitan Landscape, New York: Routledge

Developing an urban sustainability toolbox using earth observation data and GIS for monitoring rapid urbanisation in developing countries

Dr Walter Musakwa, Department of Town and Regional Planning, University of Johannesburg, South Africa

Prof Adriaan Van Niekerk, Center for Geographical Analysis, Stellenbosch University, South Africa

Mr Mbinza, Department of Town and Regional Planning, University of Johannesburg, South Africa

1. Introduction

Urban planners require data to monitor sustainable urban development. Accordingly this study is a synthesis of a studies by Musakwa (2013) and Musakwa and Van Niekerk (2013) who evaluated the potential of earth observation (EO) for monitoring and modeling sustainable land use in urban centers using Stellenbosch, South Africa as a case study. The unavailability, unreliability, outdatedness and unstandardised nature of urban land use planning data in developing countries was the motivation for the investigation. Many local authorities are inadequately equipped to plan for sustainable development in hyperchanging environments. Because sustainable land use, like sustainable development, are elusive concepts to put into practice in routine decision-making, an emerging structured framework, decision consequence analysis (DCA) was proposed to aid decision making for sustainable urban land use planning. DCA breaks complex problems, such as sustainable urban development, into increasingly smaller units until the particular component can be accurately analysed and understood within the context of the overall problem. Therefore, sustainable urban land use was divided into three themes, namely land use change and land use mix, urban sprawl and the urban built-up area. Sustainable urban land use indicators for each theme in the toolbox was identified from literature (Table 1)

2. Urban sustainability toolbox

An overview of the toolbox is summarised in Table 2. For the exploration of the socio-economic impacts relating to social and spatial integration, health and safety, the Global Land Use Mix Index (GLUM) and Local Land Use Mix Index (LLUM) indexes and Land Use Frequency (LUF) can be used. Similarly, land use change, impervious surface concentration and the urban extent highlights environmental impacts and are useful for determining the rate of land transformation, human-nature interaction and growth of the urban footprint. LUC informs decisions pertaining to the preparation of local and zoning plans and spatial development frameworks (SDFs). SDFs and local plans illustrate projected land patterns and developments.

Table 1: Selected sustainable land use indicators

Theme	Indicators	Unit of measurement	Analysis scale	Significance and thresholds	Sources
Land use change and land use mix	Land use mix index (global or local)	0 to 1	Neighborhood or city	A land use index of 0 denotes low sustainability and 1 highly sustainable.	Song & Knaap (2004); Song & Rodriguez (2005)
	Land use frequency	Frequency	Neighborhood	A high number of complementary land uses per neighborhood is desirable for sustainability, unlike low mixing intensity.	
	Land use change	Percentage	City or town	Land use change impacts all the other indicators. A change from natural ecosystems to urban use is generally unsustainable.	
Urban sprawl	Global Moran I	-1 to 1	Global	A value close to 1 denotes compactness, which is highly sustainable, a value close to 0 indicates random scattering, while -1 denotes a dispersed pattern, which is highly unsustainable.	Anselin (1995, 2003, 2005)
	Local Moran I	A positive value denotes spatial clustering and a negative value indicates presence of outliers.	Neighborhood	HH and HL denote hot spots, which are relatively unsustainable, whereas LL and LH denote cold spots that are relatively sustainable.	
	Spatial cluster and outlier identification	High-high (HH), low-low (LL), low-high (LH) and high-low (HL). HH and LL are spatial clusters while LH and HL are outliers.			
Built up-area	Building density	Buildings per hectare	Neighborhood	20 or less building units per hectare (bu/ha) is regarded as low density, between 20 to 50 bu/ha medium density and greater than 50 bu/ha as high density	Angel (2010); Ewing (1997); Urban Land Institute (2010); Jabereen (2006); Jones & MacDonald (2004)
	Building height	Storey's	Neighborhood	2-12 storeys reduce environmental, social and social costs. Above 12 storeys increases cost significantly	Ding (2013); McLennan (2009); Yabuki, Miyashita & Fakuda (2011)
	Impervious services	Impervious surface per hectare	City and neighborhood	A mix of pervious and impervious required for cities to breathe	Nowak & Greenfield (2012); Weng (2012)

Table 1.1: Urban sustainability toolbox

Component	Indicator	Impact on urban sustainability	Urban planning decisions which the indicators can inform	Ideal data sets
Land use change and land use mix	Land use change (LUC)	Environmental	<ul style="list-style-type: none"> Promote efficient use of space by managing change from non-urban to urban uses, that is reduce land transformation and growth of the urban footprint. Facilitate development of spatial development frameworks, zoning and local plans. 	<ul style="list-style-type: none"> Land use data Cadastral data
	Global land use mix (GLUM) index	Socio-economic	<ul style="list-style-type: none"> Promotion of mixed-use cities Planning for spatial and social integration as well as urban designs that promote the pavement-cafe idea (social vibrancy). Planning for safe and healthy communities Improved access to socio-economic opportunities 	
	Local land use mix (LLUM) index			
	Land use frequency (LUF)			
Urban sprawl	Global Moran index (Moran I)	Environmental and socio-economic	<ul style="list-style-type: none"> Identification of urban sprawl hot and cold spots Land parcel intensification, subdivision and consolidation as well as densification strategies Promotion of social and spatial interaction through planning of different land parcel sizes. Efficient use of space to facilitate development of compact cities or the alternative making room paradigm. Planning for public transport Planning for new developments that amortize infrastructure costs. 	
	Local Moran index (Moran I _s)			
	Urban extent	Environmental	<ul style="list-style-type: none"> Demarcation of urban edge and planning for future growth Rate of land transformation, i.e. non-urban to urban uses 	
Built-up area	Building count and density	Environmental and socio-economic	<ul style="list-style-type: none"> Densification and intensification strategies Service provision, i.e. amortization of infrastructure costs Provision of public transport, circulation, accessibility, and parking Other urban planning issues such as flood risk management, informal settlement upgrading, population estimates and disaster management Encouraging social and spatial integration 	<ul style="list-style-type: none"> Land cover data
	Impervious surface concentration	Environmental	<ul style="list-style-type: none"> Minimizing negative land transformation and indiscriminate growth of the urban footprint Planning for a healthy mix of built-up areas and open spaces to allow cities to breathe (green infrastructure). Managing the urban microclimate through landscaping techniques which are important tools in mitigating climate change. 	<ul style="list-style-type: none"> Land cover data
	Building height	Cross-cutting	<ul style="list-style-type: none"> Conserving the cultural heritage Managing the urban microclimate Promoting efficient utilization of space, intensification and amortization of service costs 	<ul style="list-style-type: none"> Digital elevation model Digital terrain model Digital surface model

Impervious surface concentration is a vital indicator in the preparation of sustainable urban designs and plans, which allow cities to 'breathe' while creating urban microclimates which conserve energy and are comfortable for citizens. The urban extent is important for demarcating sustainable urban growth boundaries as well as a guide for future developments within a defined precinct.

The global Moran and local Moran indexes, building density and count as well as building height constituents of the toolbox are cross-cutting (socio-economic and environmental) indicators of urban sustainability. Building density, count and height as well as the Moran indexes are convenient for formulating densification and intensification strategies, promoting efficient use of space, and the amortization of infrastructure and service costs.

The Moran indexes, building densities and building count are useful for determining the feasibility and capacity of public transport systems and parking facilities and for conducting accessibility studies in urban areas. These indicators also facilitate decision making about practical approaches to urban sustainability that is, selecting between compact-city development or the making room paradigm, depending on the circumstance. Building height is also essential in the conservation of the cultural heritage.

The toolbox can also guide the approval of new urban developments. For example, Stellenbosch is experiencing growth in the number of gated communities marketed as being 'green' or 'sustainable' (Musakwa & Van Niekerk 2013). The toolbox can test whether these proposed developments are sustainable by applying various indicators to their proposed layouts and the results used for approval of plans or for making suggestions on how property developers can improve their designs and layouts. For instance, the layout of the proposed De Zalze 2 security state (Stellenbosch Municipality 2011) can be analyzed by using the built-up area indicators to test whether the design envisages medium-to-high densities which will enable sustainable urban development targets to be met. Moran analyses can be done on the De Zalze 2 proposal to test if it encourages efficient use. LUC will determine whether the new development will cause indiscriminate transformation of land to urban uses while the LLUM index can be used as a measure of social and spatial integration. Such analyses will help local authorities to approve new developments that are more sustainable.

The urban sustainability toolbox provides the means to monitor sustainable urban land use planning. The toolbox can be applied annually to produce objective sustainability reports and

to answer the why, when and what if questions integral to land use decision making. Such reports provide an overview of sustainability status and enables decision makers to identify specific problem areas. In Stellenbosch, Musakwa (2013) revealed that Welgevonden has medium-to-high densities, an average building height of two storeys, a low-low cluster outlier type, and a high (0.8) LLUM index. Such developments should be encouraged at the urban edge because they significantly reduce the environmental, social and economic costs of urban development.

An important feature of the toolbox is that it uses EO data and GIS analysis which enable the visual, graphical and spatial representation of urban sustainability making the information produced more comprehensible and usable for decision making. Unlike tables, which show rate of change, maps show where the change is occurring and this assists decision makers to prepare strategic actions and to target specific areas. The interoperability of EO data with a variety of GIS systems (ArcGIS and GeoDa) is also demonstrated by the toolbox. The indicators in the toolbox can also be incorporated into a SDSS for scenario building.

2.1 Data requirements

The urban sustainability toolbox requires certain data sets. For land use change and the land use mix analyses, land use and cadastral data is needed. Google Earths' Street View, available for major cities and towns in Africa and other developing countries, can help in the classification of vertical and horizontal land use mix. Three-dimensional city models and digital surface models, where available, are also invaluable for identifying mixed land uses and other land use classes such as commercial and industrial.

The calculation of Moran indexes requires cadastral data which is available for most developing countries. Scanned layout plans or designs projected for use in GIS software such as ArcGIS can be used for calculating the Moran indexes because they contain land parcel data. The global Moran I requires urban extent data, which can be derived from land cover maps.

The analysis of building density and count also requires land cover data. Three-dimensional building models derived from light detection and ranging (LIDAR) data can be used to demarcate settlement structure as well as building density and count. Land cover data is also necessary for calculating impervious surface concentration. Improved land cover classification of urban surface material calls for hyperspectral satellite imagery because it can better distinguish urban surface materials (Nichol et al. 2007; Weng 2012). Building

height calculations require a digital terrain model (DTM) and a digital surface model (DSM) derived from VHR stereo-pair imagery or LIDAR. DSMs are also useful in land use classification and for demarcating the urban extent.

Urban planning has traditionally used VHR 0.5 m aerial photographs for mundane tasks such as property identification. The availability of VHR 0.5 m spatial resolution satellite imagery holds great potential for assisting urban planning because it has the required finer spatial resolution to discriminate urban features and a high temporal resolution to detect changes at high frequency. Consequently, it is possible to produce up-to-date data sets of land use and land cover, which is crucial for understanding human-nature interactions.

The urban sustainability toolbox is flexible and can be modified by adding indicators or by choosing specific indicators depending on the issue in question. For transport issues, for instance, the requisite travel-related data can be added. The toolbox is also not confined to urban sustainability studies as it can be applied for population estimates, disaster management and telecommunications planning. This flexibility and applicability ensures cost-effectiveness and data sharing, which can lead to better urban planning decisions.

The urban sustainability indicators used in the toolbox are normalized and presented in standard format. This implies that they are universally applicable and can be used for rapid comparative studies of urban centers and development of place-independent models. Furthermore it facilitates rapid comparative studies of urban centers, learning from best practices, knowledge sharing (particularly in developing countries), identification of problem areas, modeling of future scenarios, and the effecting of policy changes

2.2 Limitations

Paradoxically a weakness of the toolbox is the reliance on remotely sensed data (satellite imagery and aerial photographs). The presence of errors in EO-derived data sets (e.g. land use, land cover, building height) is acknowledged and should always be taken into consideration when the indexes are used in decision making. Fortunately, the relatively high accuracies of (>75%) attest that EO is a reliable source of spatial data (Musakwa & Van Niekerk 2013). A further limitation of the toolbox and EO in general is the difficulty of determining mixed land use using remotely sensed imagery. This is a major constraint for automating land use mapping using remotely sensed imagery, as field surveys are in most cases necessary for producing accurate land use maps of urban centers. New sources of data, such as Google Earth's Street View product, holds much potential for reducing

expensive and time-consuming field surveys for determining vertical and horizontal mixed land use. This data is, however, not yet available for all urban areas.

The use of cadastral data in calculating the various indices by the toolbox can also be regarded as a potential limitation of the toolbox because it may not be available in all urban centers. This type of information is difficult to extract from remotely sensed data, particularly in urban areas. Air pollution data is important in monitoring urban sustainability (NASA 2009; Nichol et al. 2007), but it not available at a suitable resolution. Hopefully new initiatives such as the scheduled launch of a space borne sensor for monitoring air pollution in 2017 (Geoinformatics International 2012) will address the lack of such data. Travel-related data is also critical for urban land use planning but is normally not available at an intra-urban scale in developing countries. The lack of travel-related data is a general problem in developing countries (Hicken 2009). Cellphones equipped with global navigation satellite systems (GNSS) and volunteered geographical information (VGI) may provide a solution to monitoring movement of people in urban centers, but this kind of data was not explored in this research.

Census data, another important data source for urban planning, is not used in the toolbox It has, however, been shown that EO can be employed to monitor population dynamics (Almedia et al. 2011; Ural, Hussain & Shan 2011).

3 Conclusion

Local authorities often rely on various formats of data, some of which are inadequate, unreliable and outdated. This inevitably makes the monitoring of sustainable land use planning and urban growth unworkable, hindering local authorities capacity to leverage resources towards sustainable development. The use of EO data and GIS analysis is a resolution to the issues of unavailability, out-datedness and unreliable forms of data experienced in most developing countries undergoing rapid urbanization which makes it difficult to monitor and plan for sustainable urban development. Consequently the toolbox enables local authorities to carry out a holistic, systematic and objective view of the trajectory of sustainable urban land use development. The developed toolbox empowers role-players to make evidence-based decisions as opposed to incremental planning, subjective decisions and advocacy planning or merely accepting compact development as the only sustainable urban development paradigm.

References

- Angel S 2010. *Making room for a planet of cities*. Cambridge: Lincoln Institute of Land Policy.
- Anselin L (1995). Local indicators of spatial association. *Geographical Analysis* 27: 93-115.
- Anselin L (2003). *GeoDa 0.9 users guide*. Phoenix: Spatial Analysis Laboratory.
- Anselin L (2005). *Exploring spatial data with GeoDa™: A workbook*. Phoenix: Spatial Analysis Laboratory.
- Ding C (2013). Building height restrictions, land development and economic costs. *Land use Policy* 30(1) 485-495.
- Ewing R (1997). Is Los Angeles style sprawl desirable? *Journal of American Planning Association* 63: 107-127.
- Jabareen RY (2006). Sustainable urban forms: Their typologies, models and concepts. *Journal of Planning Education and Research* 26: 38-52.
- Jones C & MacDonald C (2004). *Sustainable urban form and real estate markets*. Edinburgh: Herriot Watt University.
- Geoinformatics International (2012). Space borne instrument to track air pollution [Online]. Available from: http://www.giminternational.com/news/mapping/earth_observation/id7081-spacebased_instrument_to_track_air_pollution.html [Accessed 30 November 2012].
- Hicken E (2009). The application of GIS at a local governmental level as a facilitation tool for sustainable development in rural Africa. Master's thesis. London: Kingston University, Department of Geography.
- McLennan JF (2009). *Density and sustainability-A radical perspective*. Casacadia: Trimtab.
- Musakwa W (2013). Evaluating the potential of earth observation for supporting sustainable urban land use planning. Stellenbosch: Sun Media
- Musakwa W & Van Niekerk A (2013). Implications of land use change on the sustainability of urban areas. A case study of Stellenbosch. *Cities* 32: 143-156
- Nowak DJ. & Greenfield EJ. (2012). Tree and impervious cover in the United States. *Landscape Urban Planning*, 107(1), 21-30.
- NASA (National Aeronautics and Space Administration) (2009). Urban and land use applications: From Los Angeles to Paris [Online]. Available from: http://rst.gsfc.nasa.gov/Sect4/Sect4_1.html [Accessed 6 August 2010].
- Nichol J, King B, Quattrochi D, Dowman I, Ehlers M & Ding X (2007). Earth observation for urban planning and management: State of the art and recommendations for application

of earth observation in urban planning. *Photogrammetric Engineering and Remote Sensing* 73: 973-979.

Song Y & Knaap GJ (2004). Measuring urban form. *Journal of the American Planning Association* 70: 210-225.

Song Y & Rodriguez DA (2005). *The measurement of the level of mixed land uses: A synthetic approach*. Chapel Hill: Carolina Transportation Program.

Urban Land Institute (2010). *Land use and driving: The role compact development can play in reducing greenhouse gas emissions*. Washington DC: Urban Land Institute.

Stellenbosch Municipality (2011). *Stellenbosch municipality integrated development plan*. Stellenbosch: Stellenbosch Municipality.

Ural S, Hussain E & Shan J (2011). Building population mapping with aerial imagery and GIS data. *International Journal of Applied Earth Observation and Geoinformation* 13: 841-852.

Yabuki N, Miyashita K, & Fukuda T. (2011). An invisible height evaluation system for building height regulation to preserve good landscapes using augmented reality. *Automation in Construction*, 20(3), 228-235.

Weng, Q. (2012). Remote sensing of impervious surfaces in the urban areas: Requirements, methods, and trends. *Remote Sensing of Environment*, 117, 34-49.

Towards a Food Sovereignty Strategy in Singapore

WAIKEEN NG, National University of Singapore, Singapore

Synopsis

Given its size and dense urban environment, it is not realistic economically or spatially to meet Singapore's entire food needs through in-country cultivation. A more pragmatic and viable solution would be to build flexibility and adaptability in the planning and development strategies so that land and space can be quickly deployed for food production when the need arises.

1. The Impending Food Crisis

The global population is expected to grow from the current seven billion to over nine billion by the mid-century. In addition, the global population is also expected become increasingly urbanised. At the same time, farming and fishing yields are declining through increased demand, reduced amounts of arable land, unsustainable agricultural and fishing practices, not to mention the impact of climate change.

The recent International Food Policy Research Institute (IFPRI) studies on the impact of climate change on monsoons cycles suggest that South Asia will experience large agricultural declines. Breakthroughs in food production – another “green revolution” – are urgently required, as will be urban agriculture, which will be increasingly important to supplement traditional, rural agriculture.

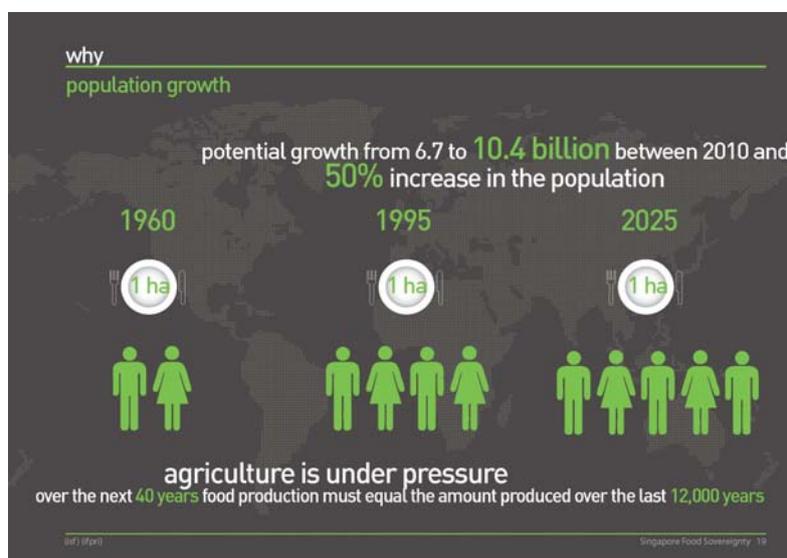


Figure 1: Agriculture under pressure

Singapore is almost completely reliant on food imports (about 90%), and therefore is in a very vulnerable position when the food crisis occurs. The National Research Foundation (NRF) recently issued a call for research innovations in this area, and the Singapore government, through the Agri-Food & Veterinary Authority (AVA) is actively seeking to diversify the source of our food imports. This includes the creation of food zones overseas, such as the China-Singapore Jilin Food Zone. However, the question remains: given Singapore's small size and already dense urban environment, how can we address the spatial requirements to attain a satisfactory degree of food sovereigntyⁱ and security?

Over two semester-long studios with fourth-year architectural students at the National University of Singapore, I explored the food aspect of urban resilience, to understand the spatial implications of an island-wide planning and design strategy that could help Singapore extend its “total defence” approach to include food sovereignty during a crisis situation. The study area, naturally, covers the entire territory of Singapore, including the off-shore islands. The “five pillars” of Singapore’s existing strategy are: military, civil, economic, social and psychological. This strategy is comprehensive and extensive, and the government has invested heavily in the physical elements required, such as emergency shelters in metro stations and schools, and in all public housing apartments. The studio contends that food sovereignty should be an integral consideration.

2. Assumptions

A key assumption for the studio explorations is that, given Singapore’s small size, large population and economic profile, it is not realistic, nor would it be economically or spatially viable to attempt to meet Singapore’s entire food needs through in-country cultivation.

Instead, the more pragmatic and viable solution would be to build flexibility and adaptability into the urban planning and development strategies so that land and space could be requisitioned by the government, and be quickly re-deployed (say, within three to six months) for food production as and when the need arises, that is, during critical or emergency situations. At all other times, when the sources of imported food are secure, these land and spaces would retain their “normal”, everyday functions.

Another key assumption for the studio explorations is the notional food crisis that will be precipitated in 2030. The choice of this date was informed by the research scenarios proposed by IFPRI and other food, population and climate change studies. Adopting 2030 as the notional “crisis year” to work towards, also helped to outline the other assumptions (such as the one-year duration of the crisis, the amount of stockpiled food available, the capacity to requisition buildings, etc) within which the policy proposals could be framed.

3. The Food We Eat

The first, more quantitative, part of the studio examines Singapore’s food sources: (i) the amount and type of food we consume; current food production areas in Singapore; where are we importing food from and at what ecological cost (ii) our actual food requirements in calories; the calorific content of different type of foods available in the region; and the spatial implications for growing our own food.

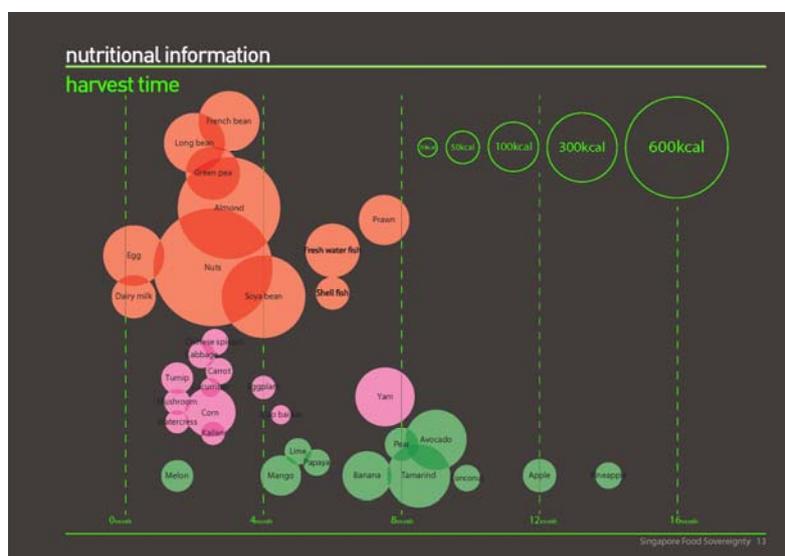


Figure 2: Nutritional Value and Harvest Times

Information from the Urban Development Authority (URA), the Agri-Food and Veterinary Authority (AVA) and the Ministry of Health (MOH) that provided insight into the food production and consumption patterns of Singaporeans were compiled and analysed. Likewise, site visits to the AVA's Sembawang Research Station and the Marine Aquaculture Centre on St John's Island broadened the technical understanding of the issues.



Figure 3A: Land required for production of carbohydrates

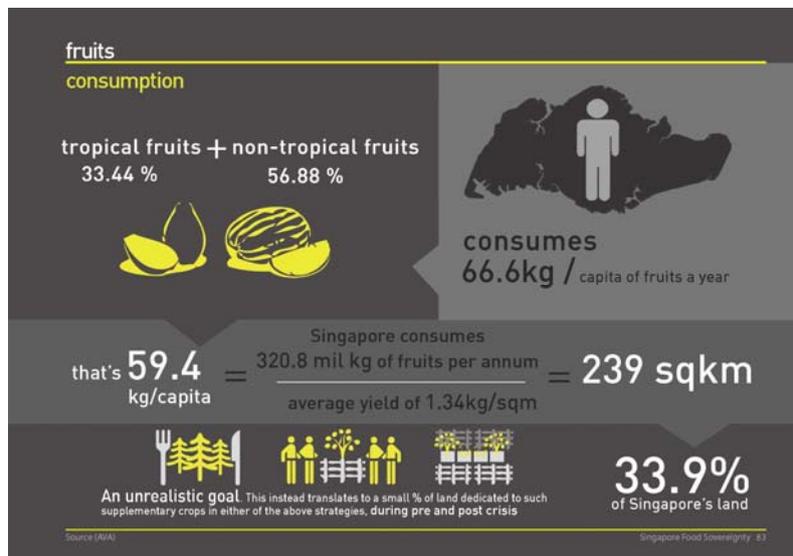


Figure 3B: Land required for production of carbohydrates

Formulating a Strategy

Quite early in the first studio, the discussions began to coalesce into three major strands, namely, **vertical (stacked) farming** (primarily green vegetables and egg production), **aquaculture** (primarily off-shore fisheries) and **productive landscapes** (for carbohydrate substitutes). International case studies, such as Cuba’s Urban Agriculture Movement, WWII “Victory Gardens”, Norway’s Svalbard Seed Vault, even traditional fish-rice farming practices in the region, etc, informed the studio of the multi-faceted aspects of the challenge.

In Singapore, only 1% of the total land area of 700km² is formally allocated for agricultural use. However, this includes land used for non-food production activities such as orchid farms or ornamental fish farms. The actual amount of land dedicated to food production is much less than 1%. It is a measure of the efficiency and productiveness of Singapore’s agricultural sector that we produce about 7% of the green vegetables we consume (including 100% of bean sprouts) and 23% of chicken eggs.

Singapore is also short of sea space. The amount of “usable” sea area for open sea farming is constrained not only by the water depth, currents and quality, but also by active port uses or as anchorages. In spite of this, the existing fish farms produce about 8% of the fish that is consumed annually.

While there is substantial scope for increased productivity through rotating planting structures or open sea fish farms, if the need for secure food sources is considered important enough, perhaps the land (and water) areas could be allocated for agricultural uses.

For each of the three strands, we developed strategies to increase the capacity for increased food production during the pre-crisis, crisis and post-crisis periods. In reference to the realistic possibility of an impending food crisis, the strategies were designed to encompass an initial increase in food production with a further increase during a crisis period.

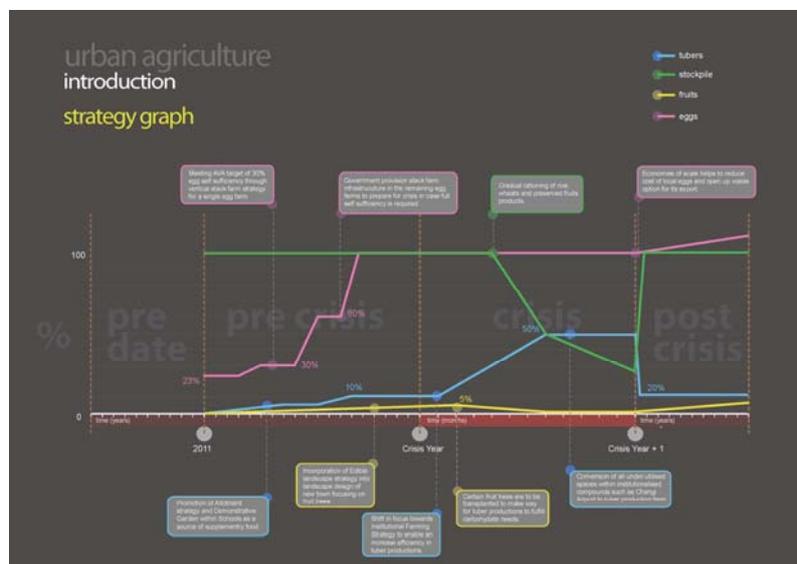


Figure 4: Timeline of the proposed Food Sovereignty Strategy

Over the two semester-long studios, the students first identified/developed strategies for each, at the national level, and then zoomed into a new town to examine potential spatial ramifications for efficient deployment during emergency situations. Bedok New Town was chosen for its mix of mature public and private housing, as well as the industrial area, not to mention the canal, reservoir and coastline. Underlying the proposals is an understanding of the key technical/scientific requirements of each “strand”, sensitivity to the political and social

contexts, and the adoption of the ethos of sustainable urbanism. Some of our key recommendations/proposals are:

Vertical farming:

- Pre-Crisis: Expansion of farms using rotation structures to increase productivity to meet 15% of green vegetable needs. Stockpiling of materials, soil and seed.
- Crisis: Conversion of HDB multi-storey car parks during an emergency to fully meet 100% of green vegetable requirements.
- Post-Crisis: Car parks revert back to regular usage. Car park roofs can be retained as community gardens.



Figure 5: Location of HDB Carparks

A key architectural component of the studio comprised (i) the design adaptation of HDB car parks to be converted into vertical farms during emergency situations, including solar energy, planting modules, water harvesting, composting etc, and (ii) vertical farms that can be used as car parks during non-emergency situations. The design for these components included the cost of fabrication and stockpiling of materials.

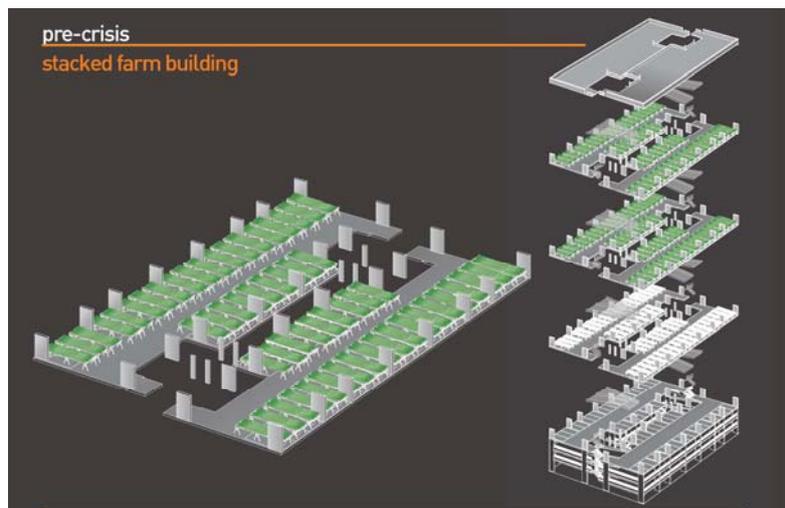


Figure 6A: Conversion of HDB Car-Parks to Vertical Farms



Figure 6B: Conversion of HDB Car-Parks to Vertical Farm

Egg Production:

- Pre-Crisis: Construction of stacked egg farms. 30% self sufficiency
- Crisis: Ramping up egg production requires lead time of 9 months for chick to mature, but potentially can be major source of protein.
- Post-Crisis: Revert to pre-crisis levels. Extra eggs produced for export.

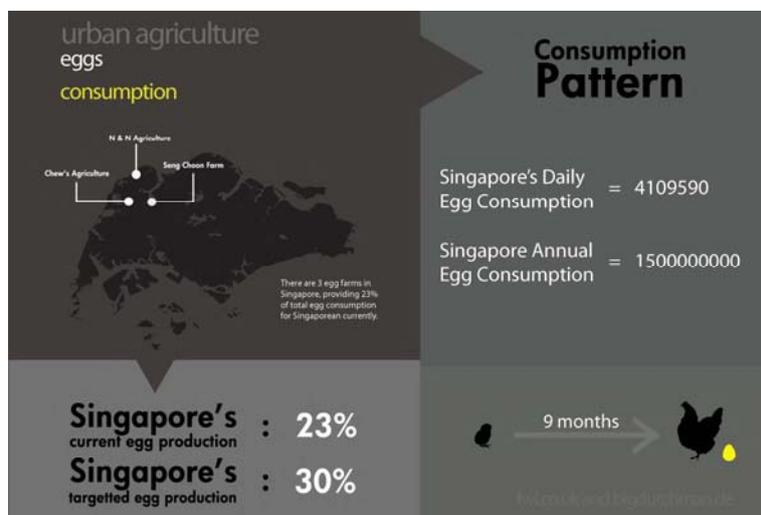


Figure 7: Egg consumption statistics

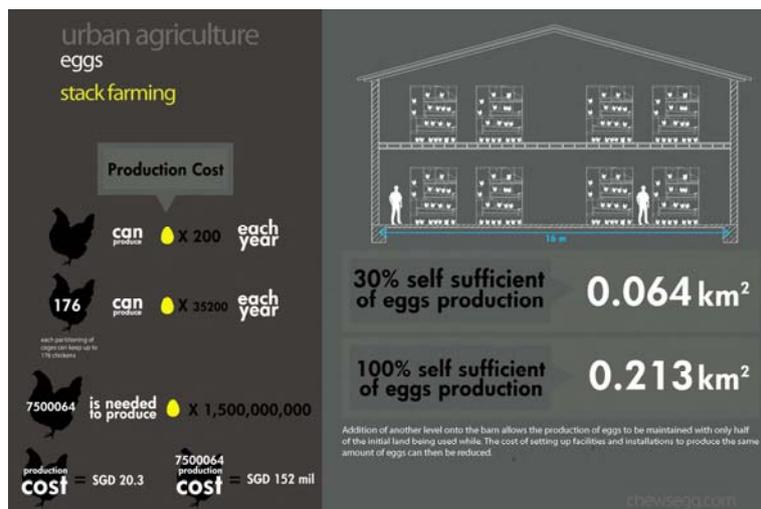


Figure 8: Egg production statistics

Aquaculture:

- Pre-Crisis: Expansion of intensive open-water fish farms, possibly in collaboration with Indonesia. Conversion of some inland fish farms to hatcheries to supply open-water farms. Aim to meet 100% protein requirement. Requires long lead time.
- Crisis: Export component redirected for domestic consumption instead
- Post-Crisis: Revert to pre-crisis status. Extra fish produced for export.

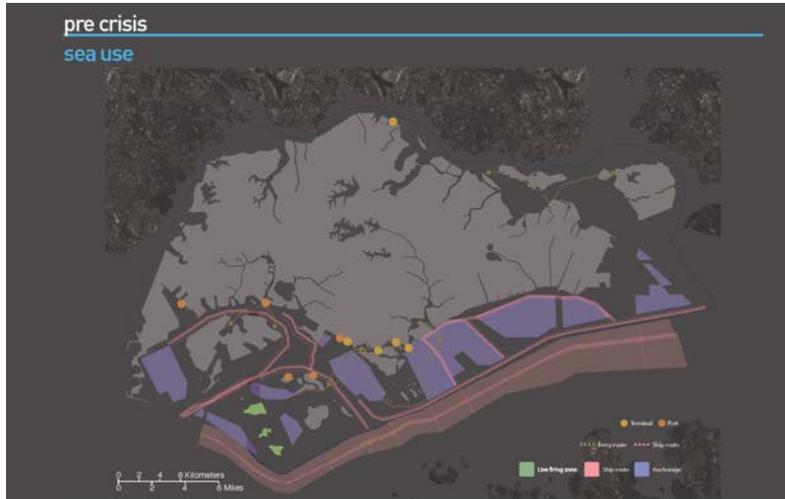


Figure 9: Existing Usage of Sea Space

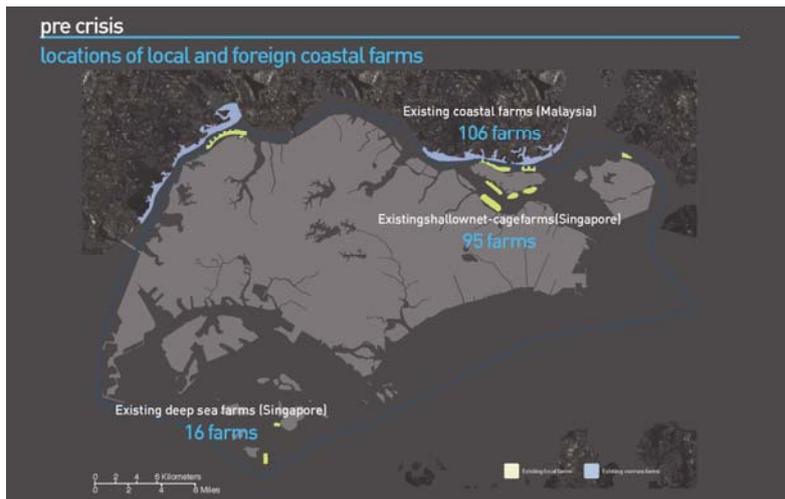


Figure 10: Location of existing fish farms

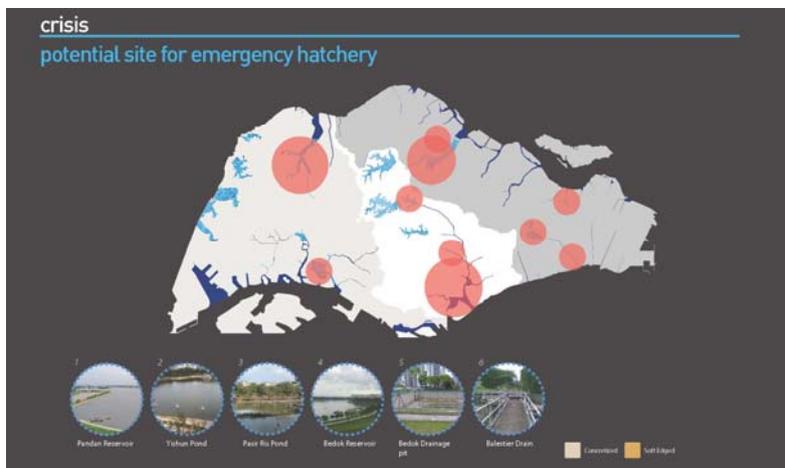


Figure 11: Potential locations of hatcheries

Productive Landscapes:

- Pre-Crisis: Stockpiling of food, materials, soils and seed. Pilot projects to increase food literacy, community/institutional farms, allotments, incorporate more edible landscapes
- Crisis: Achieving 50% sufficiency in carbohydrates; rationing of stockpiled food
- Post-Crisis: Gradual reversion to pre-crisis status, but some areas can be retained as allotments or community/institutional farms.



Figure 12: Potential land for productive landscapes

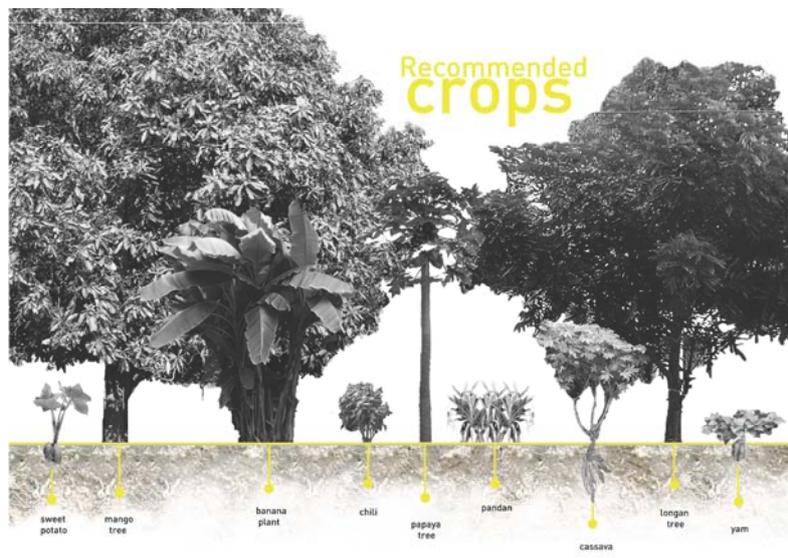


Figure 13: Suggested Crops

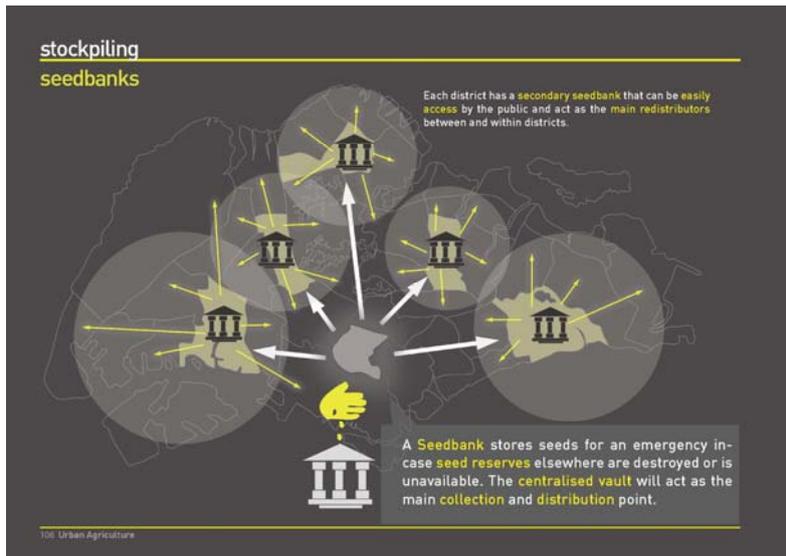


Figure 14: Stockpiling: Seedbank policy

stockpiling equipments

mobile farming denotes farming at a mobile, flexible and individual level. it is small scale and requires minimal attention and strain on resources.

found often in modular units and can be hooked onto an automated irrigation system if necessary. otherwise, it can be used for education purposes and can be brought indoors, as plants grown at this scale do not require as intense lighting as crops such as tubers and fruit trees.

the above shows how mobile farms make use of recyclable materials such as plastic bottles and rubber tires. materials, that during the event of a crisis, would peak exponentially and is easily accessible to all, and can be stacked or hung.

108 Urban Agriculture

Source: @habitat.com | HDB PC

Figure 15: Stockpiling: Farming Equipment

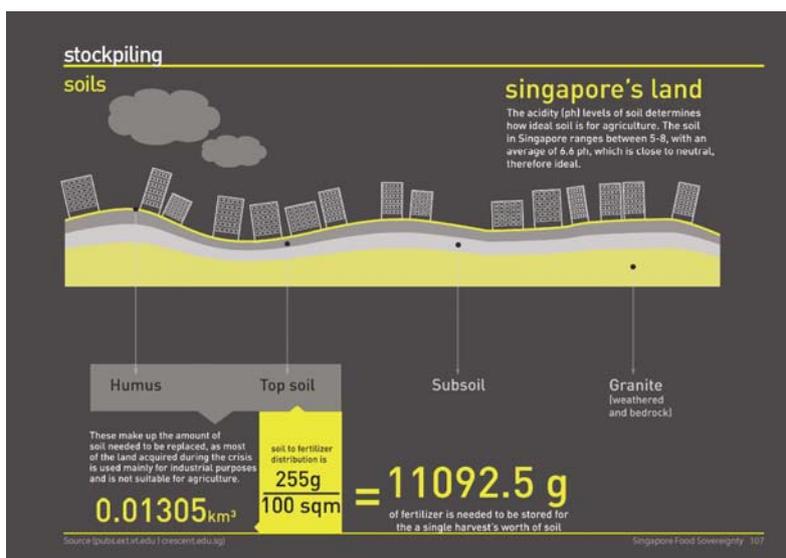


Figure 16: Stockpiling of Topsoil

4. Bedok New Town

Following the development of the three “strands” at the national level, Bedok New Town was selected to test out the potential deployment/implementation at the level of the new town. Bedok New Town has a population of about 300,000 people, and the study area covered about 15 sq.km.

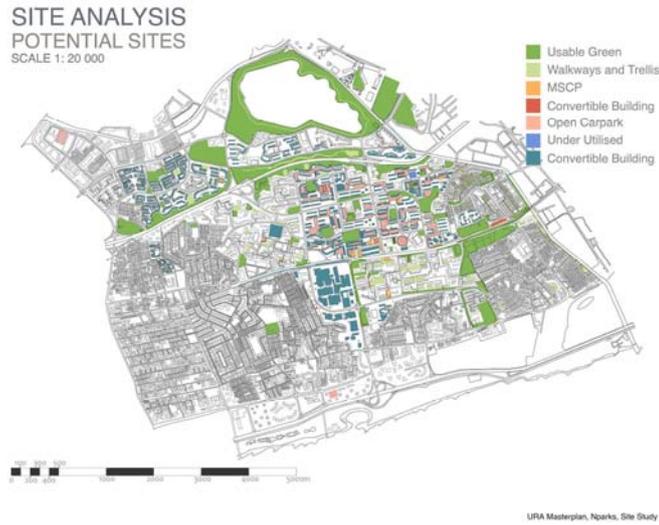


Figure 17: Potential Sites for Urban Agriculture in Bedok

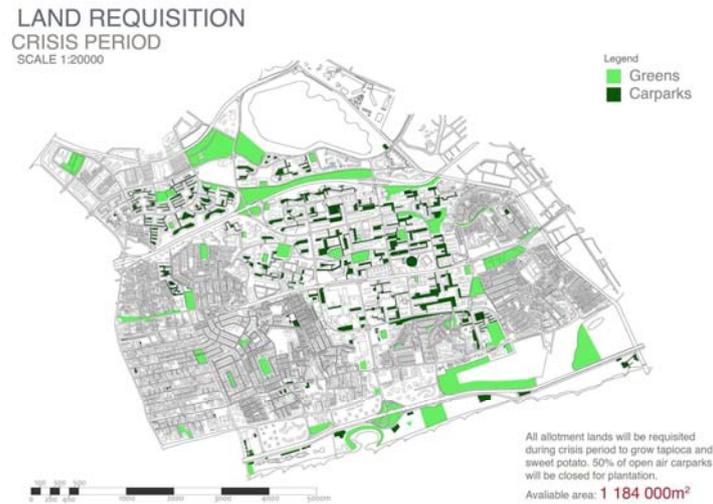


Figure 18: Potential Redeployment of Open Spaces in Bedok



Figure 19: Potential Conversion of an Educational Institute

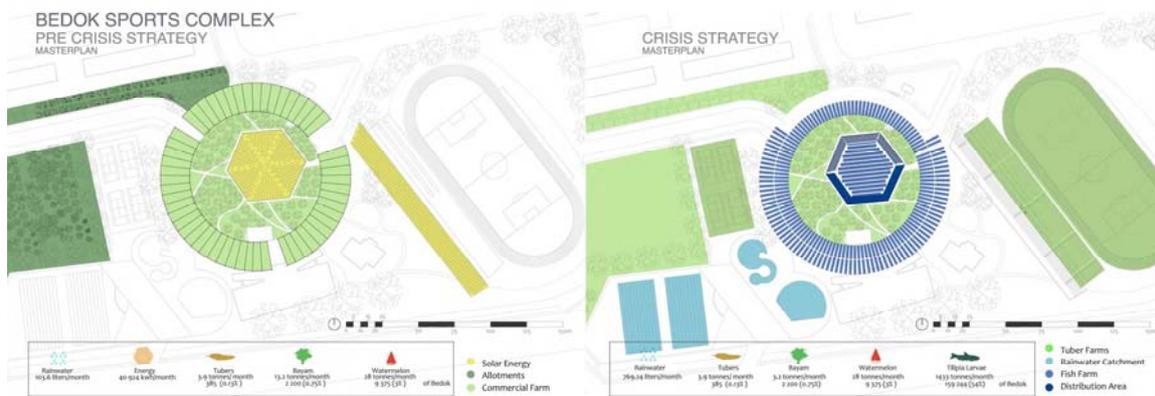


Figure 20: Proposed Conversion of Community Sports Complex



Figure 21: Potential for Converting Bedok into a "Food Stream"

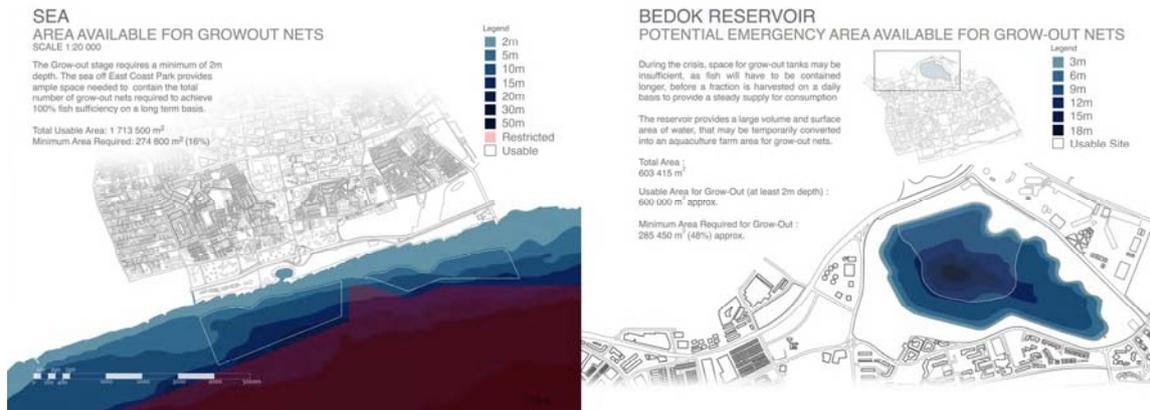


Figure 22: Potential for Aquaculture in Bedok



Figure 23: Stockpiling of Topsoil around Bedok Reservoir

5. Conclusion

The two Food Sovereignty studios was an experiment in bringing together research and teaching on an issue related to urban resilience. Designed as a prototype “research by design” studio, the studios first examined Singapore’s vulnerability (to risks such as energy, water, food, climate change, etc.). The second part of each studio focussed on the developing possible policy and design solutions.

The study demonstrated that that even if it is not economically viable for Singapore to dedicate land during non-crisis periods for agriculture, with flexible and innovative land-use planning and urban design, it is very plausible for Singapore to achieve some level of self-sufficiency during a crisis situation. Indeed, the study argues that is essential that the country dedicates resources towards developing the missing “sixth pillar” of Singapore’s “Total Defence”. In the case of the vertical farms, it is anticipated that further studio-based design research will deepen the not only the aspects of building design, but also enable us to produce vertical farming modules that could be commercially viable.

ⁱ Food sovereignty refers to the right of all persons, communities and countries to have safe, nutritious and culturally appropriate food within their unique resource, social, economic and cultural circumstances (Foodfirst, 2002).

Size, Shape and Dispersion: Urban form evolution in Saigon River Basin and its impacts on hydrologic performance from 1990 to 2010

Dzung Do NGUYENⁱ, CPG Consultants, Vietnam/Singapore

Abstract:

Urban form evolution causes hydrologic effects. Therefore, an understanding of this critical relationship can provide planning and design solution to make communities more sensitive and resilient to flooding. While several studies have raised concerns on the impact of rapid and uncontrolled urbanization in Ho Chi Minh City on the rise of Saigon River's water level, none has tried to quantify the urbanization process at basin-scale and associate this spatial phenomenon with water upheaval. In addition, the search for a hydrologic-optimal urban form is critical for Ho Chi Minh City region given the low infiltration rate of soil and rapid urbanization so that minimizing impervious surface is a less relevant solution. Response to this research gap and base on landscape ecology approach, this paper provides an empirical study of urban form evolution in term of size [urbanized area], shape [compactness and fractal] and dispersion [aggregation] within 2503 sqkm of Saigon River Basin during a 20-year period of rapid urbanization. During this period, impervious surface increased by 4 and 8 times in the whole basin and in the flood-prone areas respectively while the population increased by 2 folds only. Urban development in the Basin also became less compact, more fractal but more aggregated. Using 5 landscape metrics and a hydrologic index demonstrating run-off coefficient, the author presents potential relationship between those form variables and the hydrologic performance of the Basin. The result of this paper highlights that a more compact and concentrated urban form for Saigon River Basin may result in lower flood risk for Ho Chi Minh city.

Key words: Ho Chi Minh City, hydrology, landscape ecology, urban form;

Saigon River Basin is home to Ho Chi Minh City, the largest city of Vietnam. The Basin is the land of a sophisticated interlacement between human settlements, interconnected watercourses, wetlands and crop lands. From 1990 to 2010, one can observe an aggressive invasion of urban development into low lands and water territory within the Basin boundary. As the consequence, the hydrologic system has taken an unexpected turn at the end of the 20th century. The river water has suddenly and frequently risen to inundate thousands hectares of land and disrupting lives of almost two millions people. The urban cause of this disaster, however, is yet understood and quantified.

Therefore, the purpose of this research is to relate the spatial evolution of urban form in the Basin with the hydrologic performance of Saigon River. An understanding of this interconnection will shape an informed urban planning and design interventions, which will hopefully lead the city into a more resilient future in the wake of climate change and sea-level-rise.

1. The city and its flooding challenge

In two decades from 1990 to 2010, Ho Chi Minh City experienced a rapid population growth and fast-paced urban development. The city's population is estimated to grow at an annual average rate of 3% and increase almost by two folds from 4.1 to 7.4 million in this period. These numbers can be much higher if we take into account unregistered population and commuters from neighboring provinces, which are estimated to be approximately 2 million in 2008 (Dapice, Gomez-Ibanez et al. 2009).

In addition to rapid urbanization, Saigon River Basin has a very complicated hydrologic system characterized by powerful semi-diurnal tidal influence, interconnected watercourses, seasonally extreme rainfalls, and extensive amount of wet and low lands.

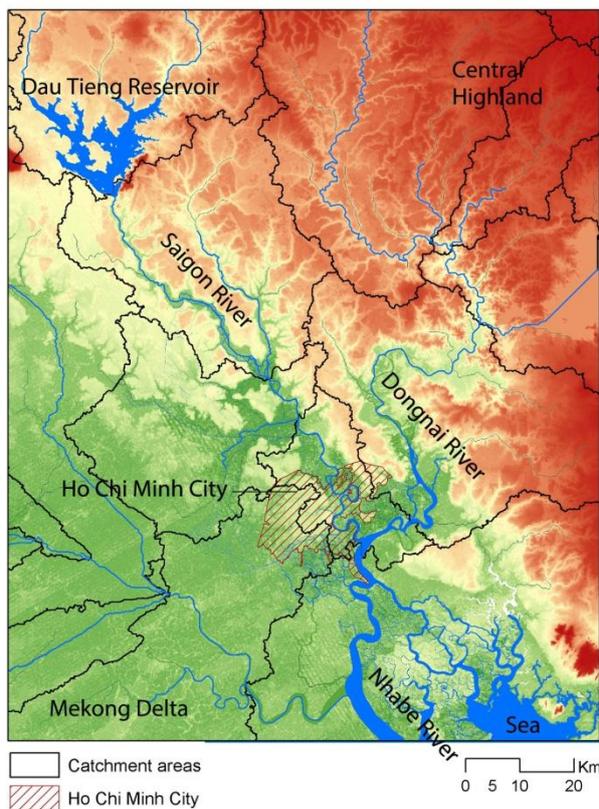


Figure 1: Topography and stream networks in Ho Chi Minh City region. Cartography by the author;

concentrated in the wet season that usually ranges from May to November. This period also coincides with high tide season (Ho 2008, Luong 2009), causing floods in the city.

Ho Chi Minh City is at high risk of inundation caused by heavy rainfall, upstream discharge and high tides. Over 60% of the provincial area has a 1.5-meter elevation or lower, while daily average peak water elevation on Saigon River rose quickly, as high as 1.58 m recorded on November 26, 2011 (Vnexpress 2011). Since the 1990s, floods have occurred all over the city with increasing frequency (Ho 2008). A report in 2006 revealed that a total of 35 sqkm of urbanized area and 230 sqkm of agricultural land had been flooded (Research 2006). In terms of the administration unit and population, 154/322 of wards and 1.8 million people, 28% of the city's registered population, are affected by floods (Research 2006, Management 2010).

High tides and extreme rainfalls are usually blamed for causing inundation (Truong 2008, Luong 2009). Data, however, show that peak the water elevation of Saigon River in Ho Chi Minh City segment has increased at a much faster rate than those upstream or along other rivers in Saigon-Dong Nai River basin and has no statistical correlation with peak sea-level, which in average has slightly decreased in the last 20 years (Ho 2010). Base on this statistical analysis, Ho (2010) hence concludes that urban flooding in Ho Chi Minh City is a product of local processes instead of global climate change. One question thus arises among researchers and in the public that if the fast-paced urbanization in Ho Chi Minh City is the cause of the dramatic hydrologic change of Saigon River. However, no empirical study has been done on the relationship between the size of impervious surface in particular and urban growth in general and the hydrologic change.

Saigon River begins in the highland of Loc Ninh, near Vietnam-Cambodia border. The river then flows downstream along the western boundary of Binh Duong before entering the territory of Ho Chi Minh City [Figure 1]. In Dau Tieng District of Tay Ninh Province, the river is dammed to create Dau Tieng Reservoir, whose functions are flood control and irrigation for agricultural production in Ho Chi Minh City region. Dau Tieng Reservoir usually discharges into Saigon River during the months of October and November. For the rest of the year, water elevation of Saigon River is influenced mostly by semi-diurnal tidal, which change four times a day (Truong 2008). Besides tidal influence, flows volume of Dong Nai River also contributes significantly to the variation of water elevation on Saigon River (Ho 2010).

The city has a tropical monsoon climate with wet and dry seasons. The average annually precipitation is as high as 2000 mm (Office 2010). However, rainfall distributes unequally throughout the year. Over 90% of annual rainfall is

While an understanding of the impact of impervious surface in term of land area on hydrology is important, this knowledge may not be sufficient to contribute to planning and design interventions in Ho Chi Minh City. For such a dense urbanism in Ho Chi Minh City, there is little space to be converted into permeable surface. Even if we can reduce impervious surface in Ho Chi Minh City, the impact of urbanization on hydrology may not change significantly, since the groundwater table in the region is high and thus the infiltration capacity of the soil is low (Ho 2012). Therefore, the fundamental question to the city's planners is not only about the size of impervious surface, but also what kind of shape, pattern, and dispersion of impervious surface patches which do the most and the least harm to the hydrologic system.



Figure 2: Flooding near Downtown Ho Chi Minh City. Photo: Minh Duc [Tuoi Tre News] - use with permission.

2. Landscape ecology and the study of urban form - hydrology interrelationship

The relationship between urban development and hydrologic performance has studied heavily (Booth 1991, Arnold Jr and Gibbons 1996, Paul and Meyer 2001, Alberti, Booth et al. 2007). Literature on this subject summarizes this relationship in three aspects. First, the pavement of land surface and soil compaction due to buildings and infrastructures reduce the infiltration rate and thus increase surface run-off significantly (Alberti 2008). Second, compacted, stripped and paved soil has lower storage capacity so that even if infiltration rate of land surface is maintained, the soil reaches saturated state at a much faster rate (Booth 1991, Arnold Jr and Gibbons 1996). Therefore, urbanization generates more run-off and causes storm-water overflow. Third, urbanization alternates natural drainage with artificial ones that allow storm-water to flow fast and intensively in paved and straighten channels (Arnold Jr and Gibbons 1996, Alberti 2008). These modern modifications of natural drainage system increase the peak flow, transport more storm-water downstream and reduce the lag time to reach peak volume. The artificial drainage system thus ultimately causes flooding downstream.

In these studies, urban development is merely represented by aggregate measurements such as impervious area. However, landscape ecologists have made an important argument that not only aggregate characteristics of a city's urbanized area such as total impervious area and population density but also the structure and urban form pattern of that city affect the hydrologic condition (Whitford, Ennos et al. 2001, Alberti 2005, Greve 2012). In the last ten years, landscape ecologists and planning scholars have tried to quantify the relationship between urban form and ecological performance (Alberti 2008). The study conducted by Alberti, Booth et al. (2007) show significant statistical relationships between spatial configurations of urban pattern and streams' ecological conditions throughout 42 sub-basins of Puget Sound basin in Washington State [US]. Studying the same basin, Greve (2012) finds linear relationship between the fraction of the year that annual mean discharge is exceeded and Floor-Ration-Area, lot coverage, and dwelling unit density. The fraction variable also has strong inverse relationship with Aggregation Index of high-and-medium density urban areas. Schueler (1994) and Klein (1979) generalize the impervious surface percent as a major indicator of aquatic health of the ecosystem: 10%-30% indicating

'impacted', and 30%-100% 'degraded' condition. Recent study by Olivera and DeFee (2007) on the impact of urbanization over hydrological changes reaffirms the significance of impervious surface and its 10-percent landscape threshold of an ecosystem to maintain its hydrologic function.

3. Research design

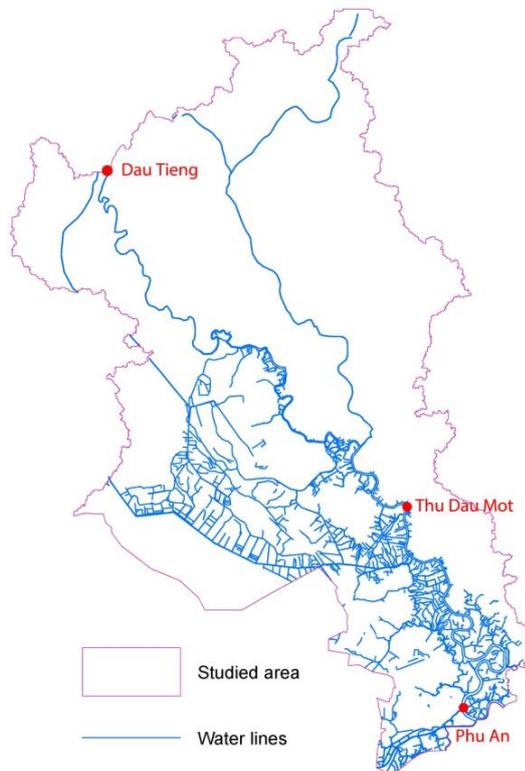


Figure 3: Stream network in the studied area which is defined by the catchment area along Saigon River and between Dau Tieng Reservoir and Phu An hydrologic station.

region. There are 2 rationales for this selection:

- **Spatial extent of urban and hydrological changes:** The research is focused on area along Saigon River in Ho Chi Minh City and Binh Duong province where rapid urbanization and hydrologic changes are observed. Saigon River forms the backbone of the area of which its northern edge is defined by Dau Tieng Reservoir and its southern edge by urban districts of Ho Chi Minh City. More importantly, upstream inlet of Saigon River is controlled by Dau Tieng Reservoir which discharges only few times a year, and the downstream outlet flow is measured by Phu An Station of which data is accessible to the public [Figure 3].
- **Intervention possibility:** Understanding the connection between human activities and, hydrological changes at this metropolitan scale is critical. It is because there is clearly a window for policy intervention and recommendation since the city administration is under pressure to take immediate actions to address flooding problem and future climate change challenges.

Temporal scale of analysis: This research is focused on the 1990-2010 period when Ho Chi Minh City region experienced rapid population growth and dramatic hydrological change and thus the impact of urbanization on water system are observable. In addition, Dau Tieng Reservoir was only completed in 1989 and thus made the studied area hydrologically independent from upstream storm events.

Three following research questions will be addressed in this paper:

1. How has Ho Chi Minh City metropolitan area grown from 1990 to 2010, particularly in hydrologically sensitive areas: wetland, low land, and upstream?

2. How has the form of Ho Chi Minh City metropolitan area evolved over 20 years period, from 1990 to 2010, when the city experienced rapid population growth?

3. How do these changes of the urban form affect the hydrological regime?

Hypothesis: The overall hypothesis of this paper is that the change in landscape composition and spatial configuration and the dispersion of urbanized areas in 1990 - 2010 period cause negative impacts on hydrological regime. I also speculate that a ratio of incremental water elevation between Phu An and Nha Be over the regional average precipitation can be an alternative indicator of hydrologic performance while run-off data is unavailable.

Spatial scale of analysis is 2503 sqkm of Saigon River Basin which contain the most developed area of Ho Chi Minh City metropolitan region.

Hydrologic data: There are 2 hydrological stations on Saigon River in the studied area, Thu Dau Mot station locating in Binh Duong province and Phu An station in Ho Chi Minh City's downtown [Figure 3]. These stations record only water elevations per hour. There is no data on flow quantity available due to the complication of measurement caused by diurnal tide. In addition, there are 2 nearby stations: Nha Be locating downstream on Nha Be River into which Saigon River empties, and Vung Tau in the coastal city of Vung Tau to record sea-level. Boundaries of watersheds within Ho Chi Minh City jurisdiction are provided by Center for Water Resources and Climate Change [National University of Ho Chi Minh City]. The data take into account hydraulic system and man-made topography in defining watershed boundaries. Boundaries for upstream watersheds are delineated from NASA SRTM Digital Elevation Model data [90-meter resolution] using ArcGIS.

Year	Data source	Major Satellite	Major acquisition date	Band used	Cell size
1990	USGS GLS	Landsat 5	1/16/1989	2,3,4	30.0
1993	USGS Landsat Pr.	Landsat 4	2/4/1993	1,2,5	30.0
1996	USGS Landsat Pr.	Landsat 5	2/21/1996	3,5,6	30.0
2000	USGS GLS	Landsat 7	11/6/2000	2,3,4	26.9
2002	USGS Landsat Pr.	Landsat 7	2/13/2002	2,4,5	26.9
2005	USGS Landsat Pr.	Landsat 7	1/4/2005	1,2,4	26.9
2010	USGS GLS	Landsat 5	12/9/2009	2,3,5	26.9

Table 1: Satellite Data Sources and Characteristics. Source: USGS Earth Explore.

Development Data: To compare development states over a 20-year period, it is fundamental that data have the same resolution and level of details over time. Therefore, the author decides to use Landsat Global Land Survey [GLS] dataset and other Landsat data which covers the entire world and accessible to the public. This satellite imagery contains multi-spectral and multi-temporal information that allows different image classification purposes and land-cover comparison over time. For the purpose of this research, the author use GLS Enhanced imagery of 1990, 2000 and 2010 and original Landsat 4, 5 and 7 images of 1993, 1996, 2002 and 2005 respectively [Table 1].

4. Measurements

4.1. Urban form measurement

To measure urban and landscape's spatial configurations, one basic unit is patch. Patch is defined as a nonlinear discrete area of relatively homogeneous environmental conditions and is relevant to a given organism or an ecological phenomenon (Forman (1995), p.39; Alberti (2008) p.100). Patch characteristics are important to the understanding of ecological processes because size, shape and dispersion of patches affect ecological regeneration and succession (Forman, 1995). Saigon Basin contains 5 major types of patches: built-areas, bare soil, vegetation, wetland and water.

Using image classification tool in ArcGIS and Landsat satellite data, landcover raster data, which contain different compositions of 5 landscape patches in 1990, 1993, 1996, 2000, 2002, 2005, and 2010, are produced [Figure 4]. Among these landscape components, only urban patches are investigated in this research. Although spatial configurations of landscape patches such as vegetated areas, wetlands and water-bodies also affect hydrologic performance, they are not included in this research due to their seasonal variations caused by agricultural activities and monsoon rainfall. The urban components of landscape composition are then separated into single-value raster data for further analysis.

Base on literature review, we select 5 metrics [Table 2] to measure urban form or spatial configurations of urban patches that relate to their impacts on hydrologic performance. Except compactness, all metrics are calculated in FRAGSTATS Software using its pre-defined formulas [Table 2]. The results of calculation are presented in Table 3.

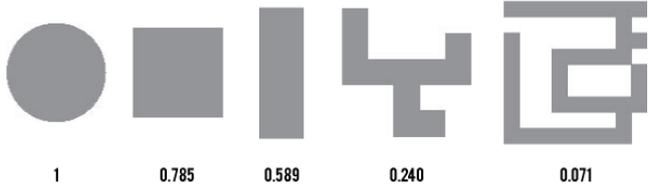
Metrics	Formula	Explanation
<p>SIZE: Total size [CA] [hectare]</p>	$CA = \sum_{j=1}^n a_{ij} \left(\frac{1}{10,000} \right)$ <p>a_{ij} = area of patch ij</p>	<p>CA and PLAND comprising a landscape mosaic are perhaps the most fundamental measurements of the spatial extent of urban development and its impacts on hydrologic system.</p>
<p>SIZE: Landscape percentage [PLAND] [%]</p>	$PLAND = P_i = \frac{\sum_{j=1}^n a_{ij}}{A} (100)$ <p>P_i = proportion of the landscape occupied by urban patch. a_{ij} = area of patch ij. A = total landscape area</p>	<p>Since PLAND is a relative measure, it may be a more appropriate measure of landscape composition than total area for comparing among landscapes of varying sizes. Previous studies affirm that landscape percentage of urbanized patches can determine ecosystem's capability to maintain its hydrologic function (Arnold Jr and Gibbons 1996, Olivera and DeFee 2007).</p>
<p>SHAPE: Compactness [K]</p>	$K = 2\sqrt{[\pi CA/10,000]}/TE$ <p>CA: Class area [hectare] TE: Edge length [m]</p>	<p>K is ecologically meaningful for the urban patch form because it concentrates the built area in a more enclosed form and conserve land for the ecosystem's hydrologic functions such as retain and filter storm-water run-off (Yang 2007).</p>
 <p>An example of urban patch shape and corresponding compactness scores.</p>	 <p>An example of complex urban edge in an unplanned settlement north of Ho Chi Minh City.</p>	
<p>SHAPE: Fractal [D]</p>	$D = \log CA / \log TE$ <p>CA: Class area [hectare] TE: Edge length [m]</p>	<p>D is the measurement of edge complexity. The implication of Fractal dimension of urban form in regarding to hydrologic performance is not yet known. Greater fractal value could mean an increase of accessibility to natural landscape for urban run-off, and thus a reduction of peak volume and flow velocity.</p>
<p>DISPERSION: Aggregate index [AI]</p>	$AI = \left[\frac{g_{ii}}{\max \rightarrow g_{ii}} \right] (100)$ <p>g_{ii} = number of like adjacencies between pixels of urban patch. $\max \rightarrow g_{ii}$ = max number of like adjacencies between pixels of urban patch.</p>	<p>AI measures the probability that urban patches are adjacent to each other throughout a landscape. Previous studies confirm that aggregated urban area has a negative impact on stream conditions and result in higher storm-water discharge volume (Alberti, Booth et al. 2007, Greve 2012).</p>

Table 2: Variables and metrics to measure urban patch configurations. Formula Source: Mcgarigal, Cushman et al. (2002) and Forman (1995);

Results: In 20 years, from 1990 to 2010, Saigon River Basin has experienced an unprecedented increase of impervious surface in terms of the total land area, landscape percentage, and the number of patches, regional distribution, and low land occupation. Base on the classification of Landsat images, a spatial evolution of urbanization process in the Basin is drawn out [Figure 4, Figure 5 & Table 3].

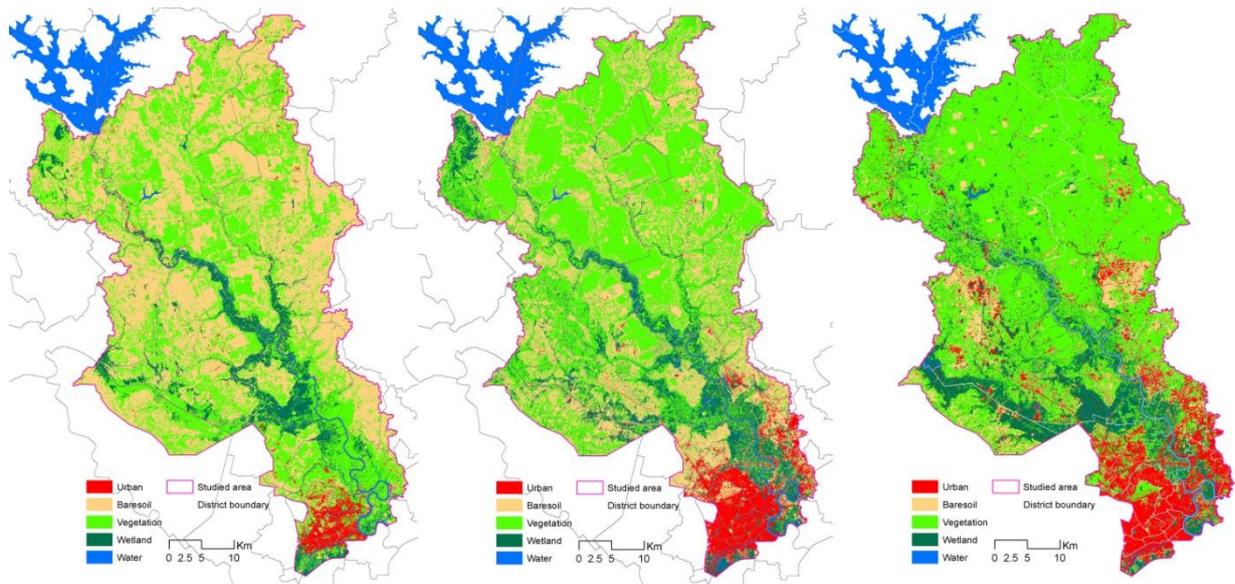


Figure 4: Landcover of Saigon River Basin in 1990, 2000 and 2010.

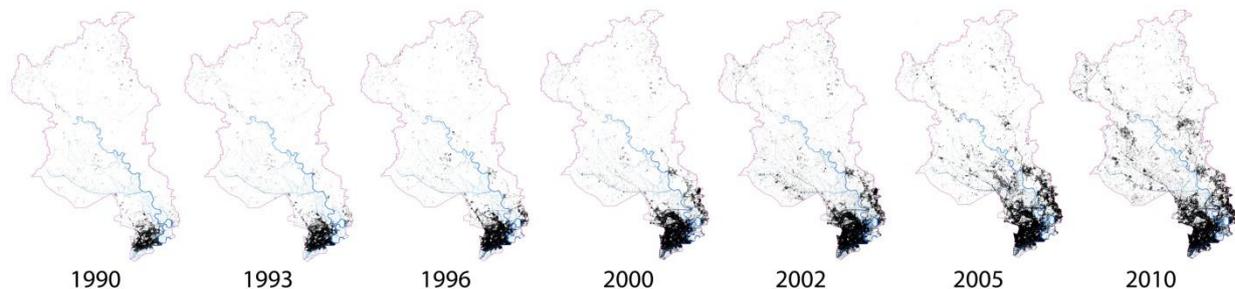


Figure 5: The expansion of urban patches in Saigon River Basin from 1990 to 2010.

In general, impervious surface or urban land cover has increased from 67 sqkm or only 2.69% of the Basin landscape in 1990 to 296 sqkm or 11.80% in 2010. Thus, impervious surface expanded by 4.4 times. Within the same period, the population was estimated to increase approximately 2.2 times only. In addition, over 44 sqkm of low land [below 1.3 meter] had been drained out to build housing and factories. As a result, the settlement area below flooding alarming rate III [1.3 meter] increased by almost 400%. Urban development also occurred in the upstream catchment area of Saigon River, especially in Binh Duong Province. About 70 sqkm of land here were urbanized from 1990 to 2010. The greatest rate of urbanization usually found in 1996 to 2010 when we also observe significantly increasing trend of Saigon River's water level. In total, 229 sqkm of agricultural and wetland were converted into impervious surface within 20-year period.

The urbanized areas in Saigon River Basin were not only changed in term of size, but also in term of shape and dispersion. Overtime, the compactness of the Basin's urban areas as well as Ho Chi Minh City urban area had been reduced from the score of 0.11 and 0.043 in 1990 to 0.07 and 0.026 in 2010 respectively. Figure 6 explains the decrease of the city's compactness as the result of urban developments, perhaps unplanned ones, along major transportation corridors such as Highway No.1 and No. 13 in the outskirts of the city – a popular phenomenon in Vietnam due to the limit access to basic infrastructure in rural areas far from transportation corridors. In contrast to the Compactness Index K, Fractal measurement D in general increased slightly during the 20 years of urbanization following a sine curve. The K value increased from 1.27 in 1990 to 1.32 in 2010. The increase of Fractal dimension might reflect the increasing dominance of informal developments along the urban edge during the 20-year period.

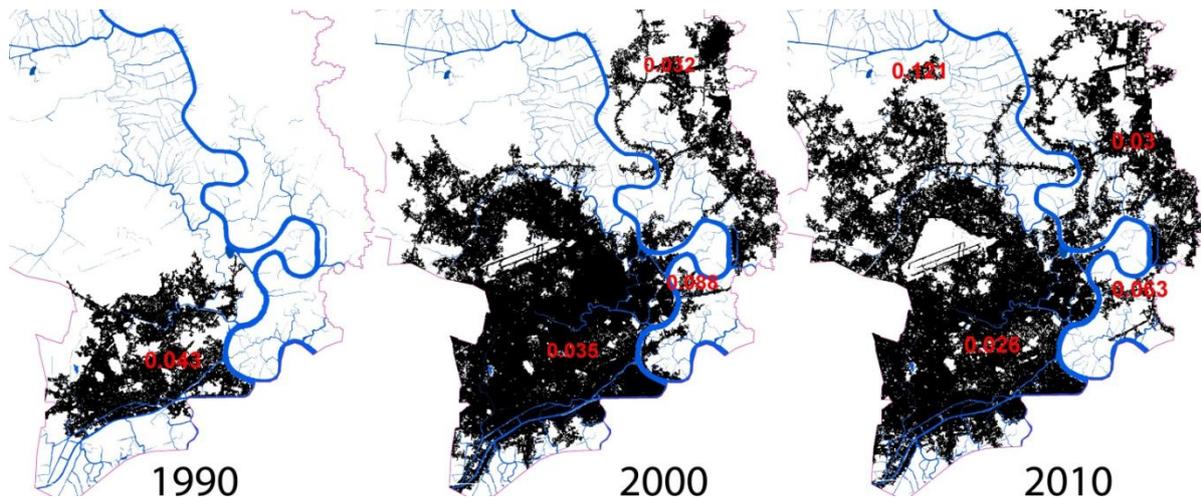


Figure 6: Compactness scores of Ho Chi Minh City urban area.

Year	Unit	1990	1993	1996	2000	2002	2005	2010
[CA]	hectare	6739.7	7177.4	10665.5	16038.1	20581.3	25077.5	29530.0
[PLAND]	%	2.69%	2.87%	4.26%	6.41%	8.22%	10.02%	11.80%
[K]		0.11	0.25	0.17	0.12	0.07	0.09	0.07
[D]		1.27	1.31	1.28	1.31	1.30	1.32	1.32
[AI]	%	70.3%	87.4%	85.0%	82.3%	74.2%	81.8%	76.7%

Table 3: Results of 6 metric calculation using FRAGSTAT software.

On the other hand, urban areas were transformed to a more aggregated distribution in the basin. Aggregation Index was first increased from its lowest value in 1990 [70%] to its highest value in 1993 [87%]. This dramatic change could be explained by an intensification process inside existing urban patches that filled the gap between separate patches and reduced the total number of patches in the Basin. From 1993 to 2010, the Index was gradually decreased from 87% in 1993 to 77% in 2010 as urban development occurred outside the existing urban cores.

4.2. Hydrologic performance measurement

Measuring the hydrologic change in Ho Chi Minh City is a challenge. Due to the dominant influence of South China Sea' semi-diurnal tide on Saigon – Dong Nai River Basin, stream flow direction at Phu An station on Saigon River changes four times a day, making it extremely difficult to measure downstream flow volume. Thus, there is no flow quantity and no run-off data collected in the region. To measure the hydrologic performance of the basin ecology, an alternative indicator, so-called *hydrologic index*, is used. *Hydrologic index* is measured by the ratio of water elevation at Phu An after removing external influences [i.e. tidal and discharge from Dongnai/Nhabe River] influence and the precipitation depth. The larger the hydrologic index is, the more run-off volume produced per unit of rainfall. The index thus strives to reflect hydrologic change by resembling run-off coefficient concept in hydrology. The urbanization of Saigon River Basin is expected to increase the hydrologic index overtime and thus, raise water elevation of Saigon River beyond the tidal-influenced levels.

To remove the tidal influence on Phu An water elevation, we simply subtract hourly water elevations at Phu An by Nha Be water elevations recorded one hour earlier [Figure 9]. Nha Be records are of downstream with strong tidal influence. More importantly, Nha Be elevations are statistically correlated with [significant at the level 0.01] and predict 94% [$R^2 = 0.9377$] of Phu An records. The variation of water elevation at Phu An from the influence of water level of Nha Be river should be a result of rainfall and hydrologic performance of the

landscape within the studied boundary. One-hour time lag is applied to take into account the time needed for water to travel between the two stations. Additionally, to minimize the inclusion of upstream discharge, to further lessen the tidal influence and emphasize the precipitation's influence on water level, the author selects only data collected in rainy days of July to calculate water-elevation difference.

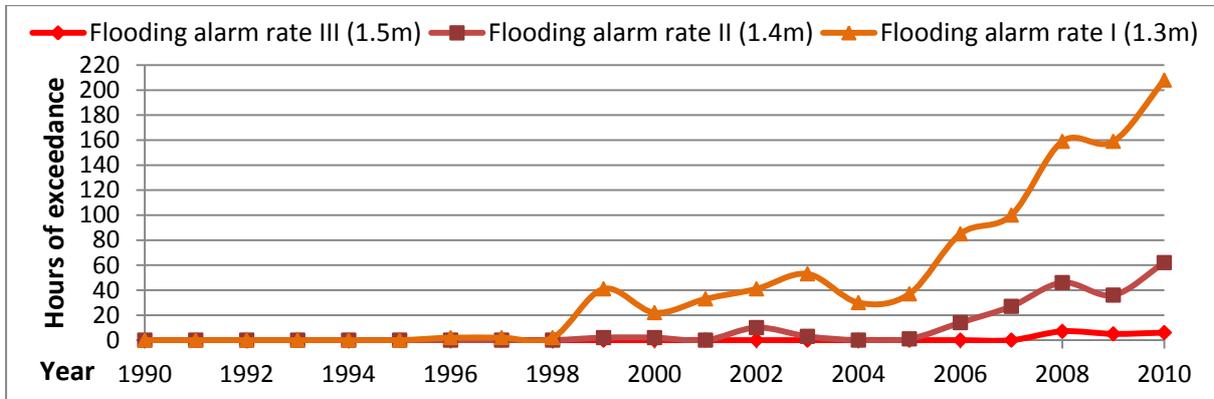


Figure 7: Number of hours of exceedance of 3 flooding alarm rates recorded at Phu An station in 1990 – 2010 period. Data source: Ho Long Phi 2012.

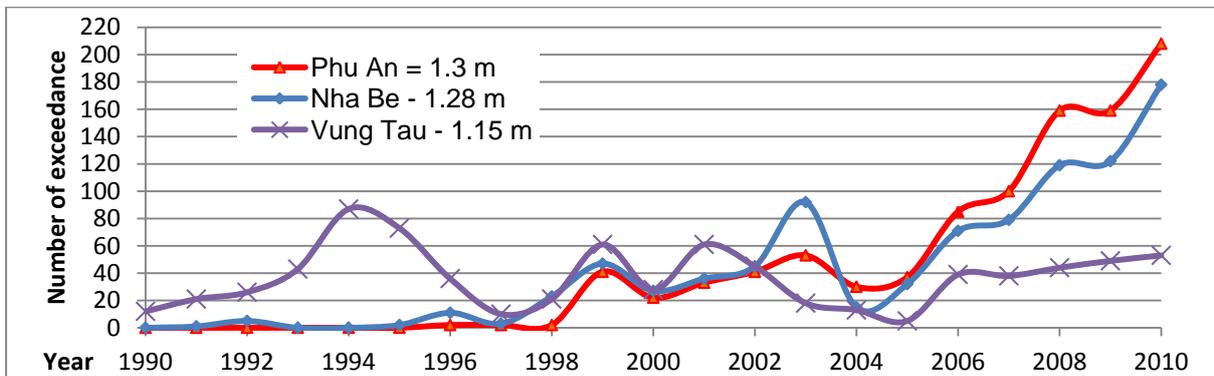


Figure 8: Number of exceedance of X thresholds recorded at Thu Dau Mot, Phu An, Nha Be, and Vung Tau for 10-year water elevations. Data source: Ho Long Phi 2012.

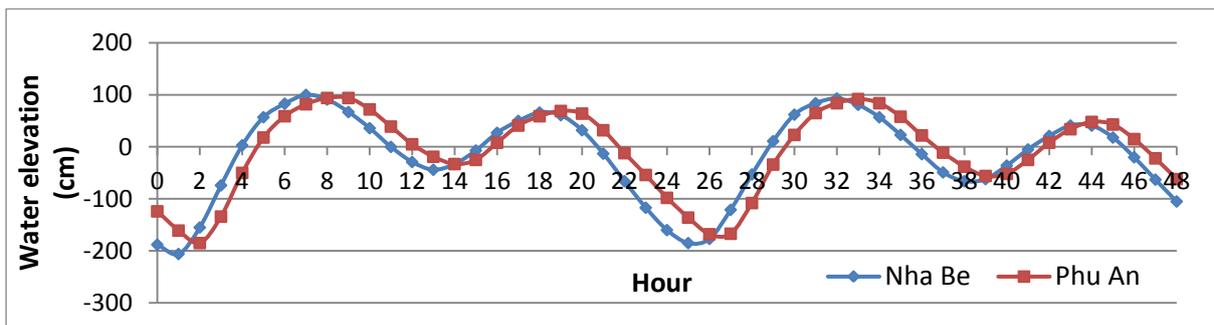


Figure 9: Water elevations recorded at Nha Be and Phu An station within 48 hours from July 7th to 8th of 2000. The graph shows the one-hour gap between Nha Be and Phu An records. Data source: Ho Long Phi 2012.

Furthermore, for the easy of calculation, the regional rainfall depth is estimated as an average of daily precipitation data collected from three stations in July: Tan Son Hoa near downtown area, Hoc Mon and Cu Chi in rural districts north of the city. The regional precipitation value is then tested its correlation with water-elevation difference between Nha Be and Phu An to examine whether the water-elevation difference is a function of rainfall. The test result proves that water elevation difference variables and average July rainfall are correlated at the significant level of 0.05 and a coefficient of determination at $R^2 = 0.21$.

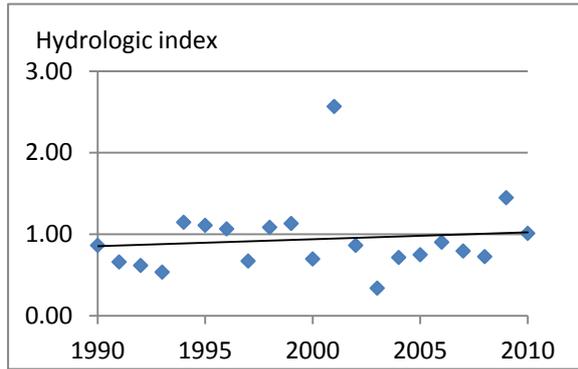


Figure 10: Hydrologic index during the 20-year period.

Results: The number of hours of exceedance of the water elevation beyond flooding alarm rates demonstrate the overall hydrologic change of Saigon River [Figure 7]. Before 1998, there was barely any exceedance. At the beginning of 1999 – 2010 period, number of exceedance hours beyond alarm rate I suddenly increased to 41 hours per year. For the rest of this period, the number of exceedance hours increased at an average rate of 14 hours per year. This is very serious since at Rate I, over 1425 sqkm [55.9 sqkm of urbanized area] of Ho Chi Minh City territory will be at risk of inundation. In term of urban influence, the urbanization of

Saigon River Basin is expected to increase the hydrologic index over time and thus, raise water elevation of Saigon River beyond the tidal-influenced levels. This phenomenon is reflected in the overall increasing trend of hydrologic index at Phu An station from 0.86 in 1990 to 1.01 in 2010 [Figure 10].

5. Urban form evolution & hydrologic change

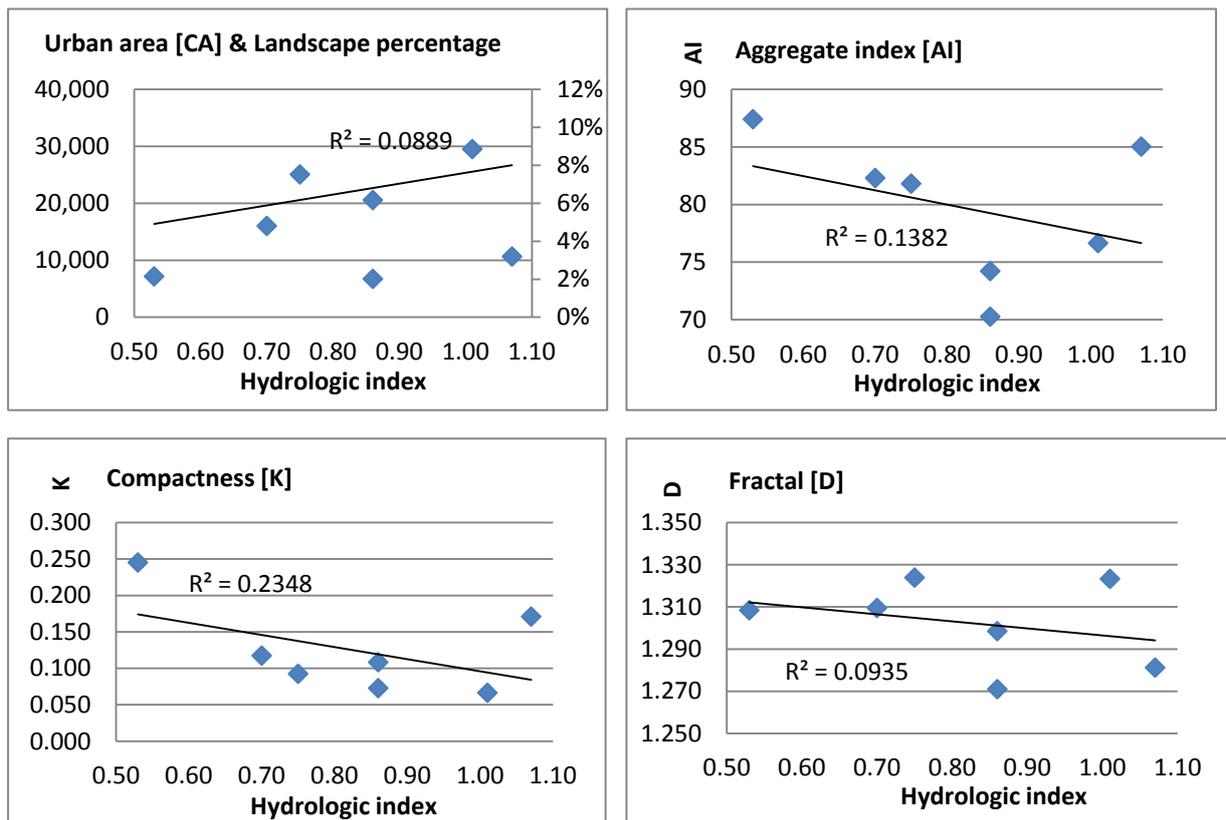


Figure 11: Potential relationship between urban form metrics and hydrologic performance.

To assess the potential relationship between urban form variables and hydrologic condition, each variable is plotted against the hydrologic index. Due to a small data population size [7 observations of each variables during 20-year period], a regression operation to delineate the relationship between urban form configurations and hydrologic index is not applicable. Instead, this relationship is examined through simple arithmetic equations.

The relationships between the measurements of urban form in term of size, shape and dispersion and the hydrologic index resonate the findings in the literature. The hydrologic index, which demonstrate run-off coefficient, is a converse function of the total area and landscape percentage of urban patches but an inverse function of compactness, fractal, and aggregation index.

Assuming these relationships are statistically significant as found in the literature, we can have some critical observations. First, while the size of impervious surface still matters, it is not an important predictor of hydrologic performanceⁱⁱ. This is logical since the Basin has high ground water level and low infiltration rate (Ho 2012). Compact and concentrated urban growth, which means higher Compactness and Aggregation Index, will also lessen hydrologic index and reduce flood threat for the region. In other words, we may expect that a fragmented and dispersed regional urban form will have negative impacts on hydrologic regime. Lastly, Fractal, the measure of boundary complexity, informs that straight and simple urban edge is unhealthy for flow regime. However, this shape dimension has a very low predicting power of the hydrologic index.

6. Conclusion

With limited data availability, this research is aimed to explore the evolution of urban form and its hydrologic impact in Saigon River Basin by quantitatively spatial analysis. The research shows the potential of landscape ecological analysis to explore the interaction between the built and natural environment at regional scale. The result of the research, though lack of statistical confirmation, echoes findings in the literature and layout some potential planning solutions for the rapid growing and vulnerable Ho Chi Minh City: a compact and aggregated metropolitan area will be a more hydrologically resilient one as well.

Furthermore, while other spatial urban compositions such as population density, road density, or floor-area-ratio are the determining factors of storm-water run-off, they are not included in this study due to lack of data. Urban form is a complicated aggregation of many spatial dimensions. It is impossible to comprehensively measure or represent urban form in few metrics. Therefore, there is a clear need for further research to continue exploring the measurement of urban form and its potential hydrologic impacts.

Ultimately, urban flooding of Ho Chi Minh City is a multi-faceted problem to which tidal variation, regional hydrologic system, extreme rainfall, upstream discharge and rapid urbanization may all have contributed significantly. However, for a more comprehensive understanding of the causes of the hydrologic change in Ho Chi Minh City, it is critical to have a better data collection, particularly the data on run-off quantity, an accurate watershed boundary. If those data are available, the same methodology demonstrated in this research can be applied with a larger pool of spatial dimensions which will uncover the connection between urban forms and hydrologic flows and unveil spatial solutions for current and future flooding challenge.

Bibliography

- Alberti, M. (2005). "The effects of urban patterns on ecosystem function." International regional science review **28**(2): 168-192.
- Alberti, M. (2008). Advances in urban ecology: integrating humans and ecological processes in urban ecosystems, Springer.
- Alberti, M., D. Booth, K. Hill, B. Coburn, C. Avolio, S. Coe and D. Spirandelli (2007). "The impact of urban patterns on aquatic ecosystems: An empirical analysis in Puget lowland sub-basins." Landscape and urban planning **80**(4): 345-361.
- Arnold Jr, C. L. and C. J. Gibbons (1996). "Impervious surface coverage: the emergence of a key environmental indicator." Journal of the American Planning Association **62**(2): 243-258.

- Booth, D. B. (1991). "Urbanization and the natural drainage system--impacts, solutions, and prognoses."
- Dapice, D., J. A. Gomez-Ibanez, X. T. Nguyen and U. V. Nam (2009). Ho Chi Minh City: The Challenges of Growth, United Nations Development Programme in Vietnam.
- Forman, R. T. T. (1995). Land mosaics: the ecology of landscapes and regions, Cambridge Univ Pr.
- Greve, A. I. (2012). "Linking urban form, land cover pattern, and hydrologic flow regime in the Puget Sound Lowland." Urban Ecosystems: 1-14.
- Ho, L. P. (2008). Impacts of Climate Changes and Urbanisation on Urban Inundation in Ho Chi Minh City. 11th International Conference on Urban Drainage, Edinburg, UK.
- Ho, L. P. (2010). "Local climate changes in Ho Chi Minh City: a statistical analysis."
- Ho, L. P. (2012). Personal communication.
- Klein, R. D. (1979). "URBANIZATION AND STREAM QUALITY IMPAIRMENT1." JAWRA Journal of the American Water Resources Association **15**(4): 948-963.
- Luong, V. V. (2009). "Analyse the fluctuation and water level trend in Saigon-Dong Nai river system."
- Luong, V. V. (2009). Ảnh hưởng của sự phát triển đô thị và biến đổi khí hậu toàn cầu đến gia tăng cường độ mưa và việc xây dựng biểu đồ mưa thiết kế cho Thành phố Hồ Chí Minh (The influence of urban development and Climate Change to the increase of precipitation intensity in Ho Chi Minh City). 11th Southern Institute of Meteorology, Hydrology and Environment Scientific Seminar, Ho Chi Minh City, Southern Institute of Meteorology, Hydrology and Environment
- Management, I. C. f. E. (2010). Ho Chi Minh City Adaptation to Climate Change. Mandaluyong City, Phillipines, Asia Development Bank.
- Mcgarigal, K., S. Cushman, M. Neel and E. Ene (2002). "FRAGSTATS: spatial pattern analysis program for categorical maps."
- Office, H. S. (2010). Niem Giam Thong Ke 2010 (2010 Statistics Yearbook). H. S. Office. Ho Chi Minh City, HCMC Statistics Office.
- Olivera, F. and B. B. DeFee (2007). "Urbanization and Its Effect On Runoff in the Whiteoak Bayou Watershed, Texas1." JAWRA Journal of the American Water Resources Association **43**(1): 170-182.
- Paul, M. J. and J. L. Meyer (2001). "Streams in the urban landscape." Urban Ecology: 207-231.
- Research, H. I. o. E. (2006). "Conference Report: Urban flooding in Ho Chi Minh City - Causes and Solutions."
- Schueler, T. R. (1994). "The importance of imperviousness." Watershed protection techniques **1**(3): 100-111.
- Truong, H. (2008). Nghien cuu anh huong cua mua, trieu den ngap ung va thoat nuoc do thi thanh pho Ho Chi Minh (Research on the impacts of rainfall and tidal to urban flooding and drainage in Ho Chi Minh City). Doctor thesis, Vietnam Institute of Meteorology, Hydrology and Environment.
- Vnexpress (2011). Trieu cuong ky luc, thanh pho Ho Chi Minh ngap sau (Tide reaches a new record, HCMC sinks deep in water).
- Whitford, V., A. R. Ennos and J. F. Handley (2001). "'City form and natural process"—indicators for the ecological performance of urban areas and their application to Merseyside, UK." Landscape and Urban Planning **57**(2): 91-103.
- Yang, P. (2007). Hydrological effects of new urban form and landscape change. Atlanta, GA, Georgia Institute of Technology.

ⁱ Email: nguyen.do@gmail.com

ⁱⁱ Perhaps, the amount of wetland and water areas, both seasonal and permanent, converted into urban development may be a better predictor of hydrologic performance in Saigon River Basin. These areas, however, can only be detected fully in the wet season when Landsat images of the Basin are covered with clouds.

Planning beyond the boundaries: Perspectives on the challenging intergovernmental collaboration towards a sustainable regional governance in Indonesia

Mahesti OKITASARI, Tetsuo KIDOKORO, The University of Tokyo, Japan

1. Introduction

Cities and regions are rarely stagnant, especially during the fast-paced development stage in the growing economy such as Indonesia. In the past decade, governments in Indonesia have been struggling to cope with growing urban problems as urbanization spilled over the city administration boundary. With urban problems are getting more scaled up to the regional level as well as increasing demand in urban service and the lack of sources available, collaborative governance has become an important strategy. Collaborative forms, such as partnerships and networks, are emerging in many urbanized cities in Indonesia. While collaborative movements have been popular in the developed countries for the past several decades, it is considered as a new initiative in Indonesia.

Managing cities during the rapid urbanization is not the only challenging issues for Indonesian governments and planners. Following the regional autonomy on fiscal and administrative policy enacted in 1999, Indonesia experienced a sudden transformation from centralized to decentralized system. 15 years after this big-bang decentralization policy, not only the local and regional planning system that undergone rapid and multiple changes but also the collaborative governance system. In looking over the array, it is no surprise to find that the institutional structure of regional governance has also undergone restructuring. With the shift in intergovernmental relations gone is the once dominant principle of authority-based, hierarchical organization that was central pre the decentralization. Yet the replacement is not necessarily the other ideal type of institutional form of delivery. In one side, the new policy was deemed successful to make government closer to the people by empowering the local governments, but it has also largely contributed to the inward-looking behavioral orientation of these local governments. In this sense the government has responded in many ways to maintain their newly acquired autonomous power while minimize their operational expenses and maximize their service coverage. Some have kept their intergovernmental collaboration or have decided to steer away toward contract arrangements with nonprofit and for-profit organizations. And, some have tried a mix of both.

Building on a debate about the challenging nature of the collaboration, the paper argues that conceptualize, measure and compare cases of intergovernmental collaboration will bring another step towards understanding the different approaches for enabling regional governance to cope with contemporary Indonesia. It aims to draw the reasoning why one local government decides to exercise a certain type of collaborative arrangement while the other chooses different type. In order to explore this potential the paper starts with an analysis of intergovernmental relations using a dimensional approach to measure the vertical and horizontal structure of Indonesian regional governance. To limit the scale of collaboration, this paper will focus on collaborative activities in providing urban service taking place in the metropolitan area. The paper also identifies the establishment and transformation of intergovernmental collaboration to draw a clear overview of the collaborative mechanism. Time series based analysis of local fiscal power diffusion index is examined to bring the reasoning from financial context.

This paper is divided into five parts. The first part revisits the relevant literatures on regional governance and intergovernmental collaboration, drawing from theoretical perspectives and

international experience. The second part introduces the Indonesian intergovernmental collaborative mechanism. The third part explains the methodology used in this research, a taxonomy of the metropolitan region and fiscal decentralization index that both have been modified to suit the Indonesian context. The fourth part covers the result of the analysis and elaborates discussion on its implication to regional governance policy. The concluding part offers a contribution to further research in collaborative governance in general and in Indonesia.

2. Intergovernmental collaboration

Governance is a topic that has long been studied by organizational scholars both in the business firms and the nonprofit context (Mizuchi, 1983; Fama and Jensen, 1983; Provan, 1980). Concern about governance and collaborative activities among city's stakeholders have produced some of the most important and enduring questions in the field of political science, planning and public administration. A lot has been crafting the conceptual tools needed to decode the process of governance (Olson, 1965; Ostrom, 1990, 1998). Within the smaller context, recent research in collaborative governance basically focuses on the two branches, intergovernmental collaboration which represents the long-standing tradition of government cooperation within the public system (Conlan, 2006; Gough, 2008) and cross-sectoral collaboration which goes beyond the implicit delegation of authority sharing that occurs with outsourcing of government service delivery (McGuire, 2006; Agranoff and McGuire, 2003; O'Leary et al , 2006).

The need to address pressing regional problems without having renounced autonomy or created concentrated power calls for intergovernmental collaboration or to some extent collaborative governance across sectors. This type of decentralized approach to regionalism emphasizes self-governance through horizontally and vertically linked organizations. On this issue, collective action theory provides the building blocks to understand a system of metropolitan governance without a metropolitan government (Feiock, 2004). This theory posits that local governments can act collectively to create a civil society that integrates a region across multiple jurisdiction through a web of voluntary agreements and associations and collective choices. Investigations of successful collaboration among decentralized actors challenged with common-pool resource issues provide a useful starting point for understanding how collaboration can be forged among local actors (Weber, 1998; Lubell et al, 2002). The recent study by Luo and Shen (2009) provided many insights on the building of collaborative research especially regarding the formation process of collaboration and actor partnership. Other research focuses on investigating how collaborative network is formed (Heeg et al, 2003; Provan and Kenis, 2007) as starting point to analyze the process of collaboration.

While research in planning stresses the value in intergovernmental collaboration, there is little attention paid to the factors that form and sustain collaborative relationships for planning. Even less research acknowledges why local government decides to exercise intergovernmental collaboration instead of cross-sectoral collaboration or vice versa. Understanding the collaborative arrangement characteristics and formation is undeniably an imperative step to have a clear idea of government's collaborative preferences. This is important due to the political nature of planning and the complexity of the decision making process that demand collaborative problem solving. However as much as understanding the formation and process of collaboration is important, the pressing challenge is to move away from describing processes and behaviors or focusing on how actors function within the network and examine the whole system in greater depth, including how they are governed, is needed. The question on how each collaboration comes into its specific governing form has not yet much explored. Addressing this issue will help governments to choose the most proper collaborative arrangement that suit their situation and help to improve the current

system. Thus examine how the system as a whole network works through measuring the collaboration and observing the dynamics that inter-dimensional interactions are generated (Miller and Lee, 2009) becomes important.

Table 1: A typology of collaborative governance.

	Limited partnership	Hierarchical partnership	Hybrid partnership	Voluntary partnership
Mobilization	Either higher-level or local/subordinate government	Higher-level government	Both higher-level government and its subordinate government	Local government
Mechanism	No regulation/ from higher-level government	Regulation from higher-level government	Both mutual interest and state regulation	Mutual interest
Actors	Higher-level government as provider, less participation from subordinate	Government at higher levels as leader, subordinate government, academics	Governments at various levels, other actors	Governments, NGOs, private sectors, academics
Role of higher-level government	Moderate	Greatest	Great	Small
Goal consensus	Low	Low	Moderate	High
Trust	Low	Low	Moderate	High
Degree of dependency towards higher government	Moderate	High	Moderate	Low
Need for network competencies	Low	Moderate	High	Low

Source: Reconstructed from Luo and Shen (2009) and Provan and Kenis (2007).

In spite of the multitude of empirical research on governance, current research on intergovernmental collaboration in Asian context is still limited, far behinds its counterpart in the United States or European countries. There has been yet research regarding Asian intergovernmental collaboration which delves into the structural differences of each collaborative arrangement as a whole or takes into detail conceptual clarity to distinguish its pattern of collaboration. The current literature mostly focuses on identifying micro aspect of collaboration such as effectiveness, mobilization and historical formation (Luo and Shen, 2009; Firman, 2010; Zul Fahmi et al, 2010).

3. Indonesian intergovernmental collaboration: Background and challenges

Indonesian government's first efforts to establish an intergovernmental collaborative arrangement in planning were started in the late 1970s with the formation of a development coordinating body in Jakarta. It aimed to collaborate development occurred in the Jakarta metropolitan region and considered as a coordinating initiative, as a necessary ability to play their role in controlling the implementation is missing. During the span of more than twenty years, the first initiative in Jakarta is only replicated in a few other metropolitan regions across the country. Intergovernmental collaboration then started to emerge again following the enactment of the decentralization act in 1999. Various types of collaborative arrangement, range from intergovernmental to contracted collaboration, is practiced due to different economic development, political situation and governmental culture as a result of Indonesian nature as an archipelago country with a number of tribes, language and culture. Since the Indonesian system does not recognize a supra-local level government there is no formal and rigid structure of governance in the metropolitan region to frame how, why, when and where local governments engage in their rational action with each other. With all of these fragmented attributes between distinctive and often opposing urban system, it is difficult if not impossible to put one single type of intergovernmental collaboration to provide the basis for lasting regional partnership, resurgence of planning, planning effectiveness and relationship.

Table 2: Transformation of Indonesian intergovernmental collaboration

Metropolitan region	Initial	Present
<i>Mobilization of the collaborative arrangement</i>		
Jakarta	Top-down (provincial) – top-down (central) – top-down (provincial)	
Surabaya	Top-down (provincial)	Top-down (provincial)
Yogyakarta	Top-down (provincial)	Bottom-up (local)
Denpasar	Bottom-up (local)	Top-down (provincial)
<i>Mechanism of the collaborative arrangement</i>		
Jakarta	Hierarchical partnership	Limited partnership
Surabaya	Hierarchical partnership	Limited partnership
Yogyakarta	Voluntary partnership	Voluntary partnership
Denpasar	Voluntary partnership	Hybrid partnership
<i>Type of network governance structure</i>		
Jakarta	Lead organization	Communicating
Surabaya	Lead organization	Network administrative organization
Yogyakarta	Shared partnership	Shared partnership
Denpasar	Shared partnership	Shared partnership
<i>Main partners for collaboration</i>		
Jakarta	Provincial government	Other local government, private sector
Surabaya	Provincial government	Other local government, private sector
Yogyakarta	Other local government	Other local government
Denpasar	Other local government, private sector	Provincial government, other local government, private sector

As can be seen from Table 2 above, three among four metropolitan regions observed transformed their collaborative arrangements at least once during the time from its mobilization to present time, albeit in various levels of changes. It also shows the tendency of local governments to shift away from the authority-based hierarchical type of partnership. With the local government gaining more power financially and administratively in developing their planning and infrastructure provision, the change is expected. While in the past planning is rather subjected to central government control, at present it becomes a local affairs. However, at some regions, the provincial government retained its position as the coordinating or mobilizing agency even after the decentralization. Denpasar, for example, shows interesting movement from a bottom-up type of collaborative mobilization towards a provincial based mobilization type of collaboration. It may occur due to the institutional capacity of provincial government in responding to the decentralization policy. The ability of provincial and local governments to respond to the decentralization has been considerably variable, depending on their capacity (Firman, 2010) and their relationship with each other. Maintaining and improving regional relations and capacities are quite challenging even without the sudden power gained by local governments and their unsurprising inward looking behavior. Under this circumstance, local governments are only interested in bargaining with the higher-level government to maximize their own interest while have less interest to collaborate with other cities, especially in delivering planning implementation. This fragmented attitude of local governments could be counterproductive with the objectives of the decentralization and has resulted in a number of problems in bigger scale service delivery which requires cross-border cooperation. The current regional collaboration mostly covers smaller scale of cross-border collaboration projects such as coordinating infrastructure projects planning along the border as observed in Jakarta and Surabaya. The problem with limited partnership is that implementation delivering heavily depends on the wistful intention of each local government in putting the project as their priority development.

Unlike Jakarta and Surabaya, the collaborative arrangements in Yogyakarta and Denpasar from the beginning were initiated by local governments not long after the decentralization law was enacted. For Yogyakarta case, it was then supported by the provincial government, making it essentially as a top-down type of mobilization with a bottom-up initiation. Even though prior to the establishment of the cooperating agency, the management of infrastructure development in the region was planned and implemented by the provincial government (Firman, 2010), gradually the provincial government only acts as a facilitating actor. The three local governments agreed to tackle regional infrastructure service provision

problem together by creating a common pool resource, including financial and personnel resources. On the other hand, collaborative arrangement in Denpasar is genuinely mobilized by local governments without any support from the central or provincial level government. From its mobilization, Denpasar already exercised both intergovernmental and cross-sectoral type of collaboration between local governments and private sector. Together, four local governments contracted their solid waste management's operational service to the private sector and cost shared the transportation service. After several years, Denpasar sees the growing interest from the provincial government in coordinating collaborative activities with the regional government starts to mobilize intergovernmental collaboration in another sector that has been tackled yet by local government such as regional transportation.

Looking over the changes taking place in each metropolitan region, even though some of them are heavily influenced by the new regionalism movement, it indicates that each local government has their specific consideration in adopting certain type of collaboration. Such outcomes imply that transformation happens due to certain situation experiencing by local government at certain moments. Now the question is how to learn from these changes and why it happens to improve collaboration for more sustainable regional governance. As basically collaboration based on relations among its actors, it becomes necessary to understand the structural relationship taking place behind those collaborative arrangements. Thus this study utilizes a dimensional approach to analyze the structural relationship and employs the fiscal power diffusion index to understand the fiscal-institutional structures of local government. The application of the fiscal power diffusion index makes it possible to explore collaborative policy questions and analyze the correlation between fiscal dependency and collaboration.

4. Methodology

4.1 Dimensional approach on regional governance

The main idea of metropolitan taxonomy done by Miller and Lee (2009) is analyzing all types of relations occurred among actors in dimensional perspectives; vertically and horizontally. It tries to capture both macro-foundational and micro-foundational studies of metropolitan regions in one taxonomy. The research defines the vertical dimension of metropolitan regions as the fundamental relationship between the state government and the constituent local governments within its jurisdiction. In the same sense that a city charter defines the structure of governance of the city, the general grant of authority from the state to local governments defines the vertical structure of governance for the region. It also describes the second dimension as horizontal and involves the fundamental relationships among the local governments within a metropolitan area. This dimension consists of three layers, one that involves the relationship between the local governments within a metropolitan area and captures the inter-organizational interactions within the public sector which closely related and sometimes can be referred to intergovernmental dimension. The second layer of the horizontal dimension involves the nature and pattern of relationship that exists within a metropolitan area between the local governments, the civic sector and the private sector. The third layer involves the relationship between the local governments within the region and regional institutions.



Figure 1: Dimensional model of governmental relations in Indonesia.

The first step to apply this dimensional-based approach to measure regional governance in Indonesian cases is by recognizing how the Indonesian system differentiates itself from the United States system. Vertically, the Indonesian system consists of central, provincial and local governments interacting in a hierarchical manner. The vertical dimension of the governmental structure can be divided into two layers; first that consists of the relations between central and local government and second that represented the relations between provincial and local government (please refer to Figure 1 for illustration).

The measuring instruments used for the analysis were retracted from the governance collaborative activities survey originally developed by Agranoff and McGuire (2003), including: joint-policy efforts, resource exchange, project based work, information seeking, and adjustment seeking. Weigh is added to the activities which more likely to involve interest accommodation or policy integration since these kind of collaborations represent an individual rational choice and norm of reciprocity that will promote voluntary cooperation (Axelrod, 1984) as well as surviving economic challenges and become the social capital that facilitated fast economic development (Putnam, 1993).

Table 3: Collaborative management activities

Vertical dimension		Weighted
Information seeking	New funding of programs and projects	
	Financial assistance	
	Policy guidance	
	Technical assistance	
	Review of plans/plan approval	
Adjustment seeking	Request resolution of conflicts with other local governments	✓
	Change in policy (flexibility)	✓
Horizontal dimension (intergovernmental and cross-sectoral relations)		
Joint policy efforts	Consolidate policy effort	
	Engage in formal partnership	✓
	Engage in the joint policy making	✓
	Engage in joint policy implementation	✓
Resource exchange	Pool/Share financial resources	
	Pool/Share personnel resources	
	Exchange information/share ideas	
Project based works	Partnership for particular project (planning, implementation)	
	Asset specificity and measurement (monitoring)	

A structured survey was conducted during two periods, from October to November 2012 and from May to June 2013. The survey targeted chief officers from the local development planning board and public works agency who responsible for planning and implementation for collaborative activities in their respective cities. The respondents were asked to check each activity they participate with various kinds of organization, including central and provincial government agencies, neighboring city agencies, state owned enterprises as well as private and civic sector. Respondent's experiences, accounts and opinions were documented through semi-structured interviews that were designed to encourage discussion about decision to collaborate with a certain actor.

Table 4: Summary of observed regions.

	Jakarta	Surabaya	Yogyakarta
Population (million) (2010)	26.6	9.1	2.4
Area (sq.km)	6,175	5,862	1,114
Density (per sq.km) (2010)	14,508 (core)	8,304 (core)	13,253 (core)
	2,874 (inner zone)	1,807 (inner zone)	1,902 (inner zone)
	3,621 (outer zone)	850 (outer zone)	1,798 (outer zone)
% Share of National GDP (2009)	24.0	7.2	0.7
Average GDP per capita (US\$) (2011)	8,185 (Jakarta only)	3,514	2,138
	3,202 (other cities)		
Number of local governments	14	7	3
Total respondent (collected)	18(16)	14(12)	6(6)
% Response rate	88.89	85.72	100.00

4.2 Fiscal power diffusion index

The fiscal power diffusion index (FPDI) used in this paper is extracted, generated and developed from fiscal decentralization model (FDM) used by Uchimura and Suzuki (2009) to meet the availability of data while adequate enough to explain the Indonesian situation. The idea is derived from an acknowledgement that decentralized governments are those that have more governing bodies making decisions on public services and has enough fiscal autonomy to implement their plan while more centralized governments have fewer governing bodies making the same decisions and more fiscal dependency to higher-level government. Unlike the metropolitan power diffusion index (Miller, 2002) which employs a single score that measures how many separate local-level governments in the United States provide common public services and how much each of those governments spends on providing those services, the FDM examines the intergovernmental fiscal relationship between higher and lower level of governments including the local expenditure responsibility and local fiscal capacity to show local governments' fiscal diffusion from higher-level government. The sole reason to use FDM as a basis for this study at this moment is mostly due to data constraint but the possibility to utilize MPDI for more comprehensive result is not closed.

The data used in FPDI address the present need for an adequate fiscal assessment in relation to local government fiscal dependency. Three major variables are used and all data are collected from 1998 to 2013 annual local government financial report issued by the Ministry of Finance to sufficiently cover the difference between before and after the decentralization era. The result is divided into four periods according to the year when a new fiscal balancing budget policy was issued, first period covers 1998 to 2000, second period (2000-2006), third period (2007-2010) and last period (20011-2013). The first period will give an overview of fiscal balancing power before the decentralization, the second will represent the situation of local fiscal power in the wake of decentralization and the last two will show the result of fiscal balancing policy update post-decentralization issued in 2004 (new fiscal decentralization act) and 2005 (new budget balancing regulation).

Table 5: Indicators for fiscal power diffusion index.

Indicators	Description
Local dependency on fiscal transfer	% fiscal transfer from central, provincial governments on local total revenue
Local fiscal autonomy	% local revenue compares to local total revenue
Local fiscal responsibility	% local expenditure funded by local compares to total expenditure

5. Findings and discussion

Table 5 shows the pattern of collaborative governance in three Indonesian metropolitan regions based on their vertical and horizontal activities. Both dimensions can be viewed broken down into two component parts each. The two components for the vertical dimension are central and provincial interaction while the horizontal dimension consists of intergovernmental and cross-sectoral interaction. The information given from the results demonstrated that the pattern of vertical interaction for both central and provincial is fairly comparable in the three regions. One important aspect of this result is that it rejects the common belief which claim that Jakarta as a capital region has a historical legacy of closer relations with central government. This claim may have been correct during the pre-decentralization era when planning system and Indonesian government system as a whole are highly centralized and hierarchical at best where central government controlled all aspects of planning. At that time, as the capital region, Jakarta has been given development priority which resulted in the high level of primacy compared to other major cities across Indonesia. In the post decentralization era rather than closer proximity, proactive approach from local government to central government plays more important role in shaping local-central interaction. Indeed, in this study, the Jakarta region demonstrates about the same

level of activity with the Surabaya region and has less activity compared to the Yogyakarta region.

Table 5: Mean of collaborative arrangements.

	Unweighted			Weighted		
	Jakarta	Surabaya	Yogyakarta	Jakarta	Surabaya	Yogyakarta
<i>Vertical dimension</i>						
Central interaction	7.06	7.30	9.17	8.12	8.90	10.67
Provincial interaction	7.00	6.30	11.67	8.17	8.10	14.00
<i>Horizontal dimension</i>						
Intergovernmental interaction	11.65	9.20	18.67	15.53	11.70	24.00
Cross-sectoral interaction	15.12	13.70	6.83	18.06	16.80	8.00

The result of the statistical analysis of the provincial interaction follows a similar pattern as the central interaction where a significant score gap occurred between Yogyakarta and the other two regions. Yogyakarta maintains a high level of activities with its provincial government, almost doubled compared to Surabaya. Looking into the detail of the provincial interaction, it is partially understandable that the Yogyakarta region enjoys a higher level of provincial interaction given it is also a special provincial region where the sultanate system still employs a strong influence upon the provincial governmental system. Unlike other provinces in Indonesia, the Yogyakarta special province is basically a sultanate government system where the head of the province is not directly elected by citizen but an inherited position given to the king. Historically, it has a strong Javanese tradition embedded in its social and political culture which is hierarchical in nature.

When the extent of change from weighted to unweighted measures for the vertical dimension is compared, it is found that Surabaya shows the biggest change, which may indicate that local governments in Surabaya are involved more in adjustment-seeking activities with the central and provincial governments among other observed regions. This means that the region puts more consideration and emphasis towards activities to accommodate its interest to the higher-level governments. Between Jakarta and Yogyakarta, when the indexes are weighted, there are not many differences which means that both regions are much similar in their priority activities directed to the central and provincial governments.

The horizontal dimension produces the most complex results of all the indices in both intergovernmental and cross-sectoral interaction, with Surabaya and Yogyakarta located at the extreme ends of the spectrum and Jakarta is falling in the middle. On the intergovernmental interaction, the score from the Yogyakarta region is twice higher than the Surabaya region, showing that the extent of interaction and collaboration between local governments is significantly higher in Yogyakarta. With this result, it means that the local governments in the Yogyakarta region are more likely to interact, exchange information and collaborate with each other than its counterparts in Jakarta and Surabaya. The Jakarta regions fares better than Surabaya with Jakarta officials are at least 30% as likely to interact with its neighboring local government compared to Surabaya. In the other hand, the exact opposite result is found in the cross-sectoral interaction. Whereas local governments in the Yogyakarta regions are the most frequent users of the intergovernmental interaction, they are the least frequent users of the cross-sectoral interaction. The score is strikingly different which lead to assume that the Yogyakarta region employs a limited cross-sectoral collaboration and more focused to develop their intergovernmental collaboration. Unlike Yogyakarta, instead of interacting with their neighboring municipalities, the local governments in Surabaya tend to put more focus to form a collaboration with the non-governmental organizations. Similar tendency is employed by Jakarta albeit in a less drastic manner.

When we further look into the weighted result of the horizontal interaction, a closely similar value increase in the intergovernmental interaction shows that all three regions have a corresponding view on their priority in developing its intergovernmental collaborative environment. The change on the cross-sectoral interaction is more diverse with Surabaya

puts the most changes, followed by Jakarta and finally Yogyakarta. This further explains the collaborative preference of each region whereas Surabaya is less likely to have interest to collaborate with its neighboring municipalities than with the public or private sector and Yogyakarta employs the exact opposite preferences. It can be translated that the local governments in the Surabaya region are more open in accommodating non-governmental sectors in their planning and infrastructure provision, while the local governments in the Yogyakarta is more accommodating towards other governmental entities. Moreover, Jakarta shows another different preference as the region inclines to put the same amount of attention for both its intergovernmental and cross-sectoral collaboration. The planning policy of local governments in the Jakarta region is more likely to accommodate all sectors, both governmental and non-governmental.

The considerable involvement of the non-governmental sector in the horizontal collaboration of Jakarta and Surabaya might be explained by the economic situation of the regions. As two of the biggest metropolitan areas and as a trade and industrial regions, the Jakarta and Surabaya region generate more capital compare to Yogyakarta. Regions with large and growing population create more opportunities for growth because they have more capital and in turn bring more economic revenue to the local government. It is unsurprising to find that local governments in both regions are more open and familiar with other stakeholders to collaborate. Yogyakarta which is more famous as a cultural region rather than a commercial or industrial region most likely has less non-governmental organization located in its area. Thus making it more challenging to form a cross-sectoral collaboration than an intergovernmental partnership.

Both Jakarta and Surabaya show a similar tendency on their vertical and horizontal interaction with other entities with respect to levels of intergovernmental collaboration, create a weak interaction with the central and provincial government and a strong relationship with other non-governmental organizations. It is also interesting to note that the Jakarta and Surabaya regions are statistically similar but with different reasons. Surabaya represents the example of an inward looking behavior government system given the tendency to deliver their service provision by themselves and maximize their own interest through a top-down assistance from the higher government if needed. In a sense, the absence of a coordinating agency in the region, the municipalities tends to communicate less with their neighbors adding to the almost non-present influence of provincial government in the region. Jakarta on the other hand, the lower score of intergovernmental collaboration might be explained by the physical location of the region. Since it covers 14 cities under three different provinces, inter-local or regional policy issues must be dealt within the context of two layers of government system and three different institutional arrangements, making negotiating with these issues are very challenging. Even though the Jakarta region has a coordinating agency, this result further clarifies that the agency is not functioning properly as it should be. In situations like this, building a strong regional institutions as policy coordinator or facilitator with a strong power to implement the policy is a viable option for the local government if this institution does not threaten local authority.

Table 6: Fiscal power diffusion index.

	Local dependency on fiscal transfer (Central government)				Local fiscal autonomy			
	1998-00	2001-06	2007-10	2011-13	1998-00	2001-06	2007-10	2011-13
Jakarta	69.70	70.16	63.38	56.71	24.51	20.39	21.43	29.50
Surabaya	79.91	80.95	75.79	70.10	15.91	13.03	14.55	21.45
Yogyakarta	78.68	79.44	74.04	69.87	17.36	13.41	15.16	18.24

Fiscal decentralization are expected to have a net positive effect on collaborative initiative and performance. Local autonomy growth affects the local dependency to the higher-level governments and is in turn affected by growth in the economy. Growth in the local autonomy means less centralized and hierarchical system of administering the plan. In assessing the result of the fiscal power diffusion analysis, it is found that each region observed displays

similar tendency of fiscal decentralization experienced over the years, with movement inclines towards higher fiscal autonomy and less dependency albeit in different levels.

As can be seen in Table 6, among all three regions, the Jakarta region has the least local dependency and the most local fiscal autonomy throughout the years. It can be explained due to its status as the economic engine of the country and fact that for years before the decentralization urban development is mostly focused in and around the region. The region possesses more opportunity to gain local revenue compare to other regions, making it more independent in directing their development using local revenue. Looking into more detail of the FPD, all three regions show similar increases in fiscal dependency from the higher-level governments and decrease on local fiscal autonomy in the wake of decentralization. It is understandable considering during that time the central government poured the central balancing fund to the local government following the enactment of first fiscal balancing policy. During 2001 to 2006, the local fiscal autonomy of the Yogyakarta region declined more compared to the Jakarta and Surabaya region even though all three regions receive an almost similar raise on their local dependency to the central government. There is a strong incline that it happened due to high provincial fiscal transfer from the provincial government to the local municipalities in Yogyakarta to help improving the local governance capacity.

The period of 2007 to 2010 and 2011 to 2013 shows the increase of local fiscal autonomy and the decline of local dependency on fiscal transfer in all regions observed. The increase saw the Jakarta and Surabaya regions as more fiscally autonomous regions compared to the pre decentralization era and the Yogyakarta region is slightly building up towards a similar place. The declining local dependency on fiscal transfer from central government in the last three years follows the central government's target to reduce the local dependency. However, it means that we expect to see an increasing fiscal transfer from the provincial government as the central government policy aims to increase the role of the provincial government to the local level. So far, the fiscal transfer from the provincial government is not significant enough, in some regions it is less than the grant and fiscal transfer from the non governmental sector and other local governments.

Matching the results from the dimensional analysis of collaborative arrangements and the FPD, we find that different tendency to perform cross-sectoral collaboration is subject to the fiscal decentralization power possessed by each local government while the same cannot be applied to intergovernmental collaboration as it depends more to interaction between local governments. As we can see, Jakarta and Surabaya with higher local autonomy have more tendency to form a cross-sectoral collaboration. Yogyakarta which possesses similar local dependency with Surabaya around the year 2001 successfully formed an intergovernmental collaboration while Surabaya failed. In a sense high level of interaction with the higher level governments has more significant effects in developing intergovernmental collaboration than the local fiscal autonomy. At present, two of three regions observed are still focusing on rather inward looking behavior tendency which is counterproductive for developing a good intergovernmental collaboration environment. With local governments only focusing on maximizing their own interest and the intergovernmental collaboration remained largely as slogan in many governmental agreements and documents rather than concrete actions.

6. Conclusion

This article has provided an examination and discussion of the structure of collaborative governance, offering a perspective on how interaction among organizations involved in planning and service provision as well as local government's fiscal power can shape the collaborative arrangements. Considering the various types of collaborative arrangements taking place in each region with its underlying characteristics such as local culture, financial and political situation, this research agrees with previous research by Ostrom (1990) that

locally evolved self-governing institutions that are adapted to specific local circumstances may provide more effective resolution of collective action problems than central intervention in many circumstances. By referring to a precedent study from Provan and Kenis (2007) we can classify those structures as lead organization structures for the first collaborative mobilization in Jakarta and Surabaya, network administrative organization structures for the current collaboration in Jakarta and voluntary structures for mobilization in Yogyakarta. Furthermore, the current challenge is how each local government can self-transform their collaborative arrangements into a sustainable collaborative governance. Given the likelihood and the desirability of change as contingency conditions evolve, how exactly the new collaborative arrangement does take place? We argue that change from one form of collaborative governance to another is predictable, depending on which form is already in place and what kind of structure it inhibited.

The above analysis demonstrates important findings at several levels. First, dimensional approach from Miller and Lee's metropolitan taxonomy is moderately effective in explaining the extent of institutional interaction and mechanism of collaboration. Second, intergovernmental collaboration depends on several factors with structural interaction among institutions and fiscal decentralization deliberately play significant impacts to determine the transformation of collaborative arrangements.

Horizontal interaction, is the most flexible and adaptable form since they are shaped by the participant sitting at the same level of governments. Since there is less fiscal dependency involved in this interaction than the vertical collaboration, it highly depends on the good intention of the local government. In the other hand, it is less stable due to its nature of push and pull of bargaining tendency where participants can enter and leave the arrangements, especially when needs and expectation change, partially due to change of local government leadership. We argue at this point, shift to a better cross-sectoral collaboration, for example, will require more fiscal autonomy from the higher-level governments as cross-sectoral collaboration is highly shaped by economic development and local government openness towards non-governmental sector which usually achieved when it is developed and independent economically. However high fiscal autonomy should also be accompanied by increasing local government capacity and balancing the network structure. Balance in network is needed since it plays an important role in intergovernmental collaboration where cities with a more central position in the network, as indicated by connections to more economic development actors, are not more likely to engage in intergovernmental collaboration since they will prefer to form collaboration with non-governmental sector. The role of balancing network can be handled by an intermediate organization. Other than balancing the vertical network, there is a recognized need or demand for having an intermediate organization outside the local government to help supporting the horizontal interaction. In a sense that the Indonesian system does not acknowledge another supra-local level of government, the provincial government has to play its role as regional government.

Another issue is to improve the interaction among organizations, especially local governments, in order to develop a collaborative environment in intergovernmental relations. More attention should be paid to the process of intensifying communication and interaction among cities. As the interaction among organizations gives significant effects on the probability collaborative outcomes, it can be translated that local government has to pay attention in increasing trust and consensus among all actors involved to sustain the collaborative network.

Further research is needed in this study to test the findings using estimation models in order to give a more appropriate and straightforward interpretation as well as observing some variances. There is still much work to do to build and test theory related to governance tendency, structures, and outcomes. This article should be viewed as a starting point for explaining the correlation between government structural interaction and transformation of intergovernmental collaboration, what forms it takes, how it evolves and how it might matter for sustainable collaboration.

References:

- Agranoff, R., and M. McGuire (2003) Collaborative public management: New strategies for local governments, Washington, D.C.: Georgetown University Press.
- Axelrod, R. (1984) The evolution of cooperation, New York: Basic Books, Inc., Publishers.
- Fama, E. F., and M. C. Jensen (1983) "Separation of ownership and control", *Journal of Law and Economics*, 26, 301-325.
- Feiock, R. C., ed. (2004) Metropolitan governance: Conflict, competition, and cooperation, Washington, D.C.: Georgetown University Press.
- Firman, T. (2010b) "Multi local-government under Indonesia's decentralization reform: The case of Kartamantul (The Greater Yogyakarta)", *Habitat International*, 34, 400-405.
- Hamilton, D. K., D. Y. Miller, and J. Paytas (2004) "Explaining the horizontal and vertical dimensions of the governing of metropolitan regions", *Urban Affairs Review*, 40(2), 147-182.
- Heeg, S., B. Klagge, and J. Ossenbrügge (2003) "Metropolitan cooperation in Europe: Theoretical issues and perspectives for urban networking", *European Planning Studies*, 11(2), 139-153.
- Lubell, M., M Schneider, J. Scholz, and M. Mete (2002) "Watershed partnerships and the emergence of collective action institutions", *American Journal of Political Science*, 46(1), 148-163.
- Luo, X., and J. Shen (2009) "A study on inter-city cooperation in the Yangtze river delta region, China", *Habitat International*, 33, 52-62
- McGuire, M (2006) "Collaborative public management: Assessing what we know and how we know it", *Public Administration Review*, 66, 33-43.
- Miller, D. Y. (2002) The regional governing of metropolitan America, Boulder, CO: Westview Press.
- Miller, D. Y., and J. H. Lee. (2009) "Making sense of Metropolitan Regions: A dimensional approach to regional governance", *Publius: The Journal of Federalism*, 41(1), 126-145.
- Mizruchi, M. (1983) "Who controls whom? An examination of the relation between management and boards of directors in large corporations", *Academy of Management Review*, 8, 426-435.
- O'Leary, R., C. Gerard, and B. Bingham (2006) "Introduction to the symposium on collaborative public management", *Public Administration Review*, 66, 6-9.
- Olson, M (1965) The logic of collective action: Public goods and the theory of groups, Cambridge: Harvard University Press.
- Ostrom, E. (1990) Governing the commons: The evolution of institutions for collective action, New York: Cambridge University Press.
- Provan, K. G. (1980) "Board power and organizational effectiveness among human service agencies", *Academy of Management Journal*, 23, 221-236.
- Provan, K. G., and P. Kenis (2007) "Modes of network governance: Structure, management, and effectiveness", *The Journal of Public Administration Research and Theory*, 18: 229-252.
- Putnam, R. (1993) Making democracy work: Civic traditions in modern Italy, Princeton, NJ: Princeton University Press.
- Weber, E. P. (1998) Pluralism by the rules: Conflict and cooperation in environmental regulation, Washington, D.C.: Georgetown University Press.
- Zul Fahmi, F., D. Hudalah, and T. Firman (2010) Lesson from inter-local government cooperation effectiveness in Greater Yogyakarta. Regional and Rural Planning Research Group, School of Architecture, Planning and Policy Development, Institut Teknologi Bandung: Working paper no. 01-2010, 6-26.

Poverty Alleviation in Lagos Urban Informal Settlements: A Sustainable Livelihood Approach

Oluwafemi OLAJIDE, School of Architecture, Planning and Landscape, Newcastle University, UK

1. Introduction

Poverty and incidence of urban informality, especially in the developing countries, are on the increase in the face of the current high trend of urbanisation. Currently, More than half of the world population now lives in urban areas while over one third of the world's urban population live in informal settlements with high incidence of urban poverty (UN-HABITAT, 2006; UN-HABITAT, 2008; Odero et al., 2009; Mundy and du Plessis, 2010; UNHSP, 2010). Informal settlement can said to be a spatial manifestation of certain living conditions which do not conform to formal planning and legal rules, standards and institutional arrangements, and the situations are often dynamic and complex, while poverty is the outcome of various dimensions of exclusions and deprivations. The proliferation of informal settlements and urbanisation of poverty as being currently experienced in the cities of developing countries, including Lagos, pose serious challenge to local, national and international urban managers as well as the attainment of most Millennium Development Goals (Barry and Ruther, 2001; UNECE, 2009).

Lagos, one of the fastest growing cities and urban agglomerations in Africa is characterized by high presence of the urban poor who are mostly accommodated in informal settlements, with a growing multi-dimensional poverty profile. In Nigeria, various poverty alleviation programmes and strategies have been lunched and implemented by both Federal and state governments, including Lagos state. It is evident, based on the current trends of poverty and incidence of informal settlements that the strategies have achieved little to no success. As noted by various researchers and urban analysts, poverty alleviation strategies have been unsuccessful in Nigeria, just like many other African countries, because poverty and poverty alleviation strategies have been narrowly conceived to mean lack of income and economic growth (Forae, 2011; Aluko, 2003; Lewu, undated). Also it has been noted that most of these programmes and strategies were either focused on rural areas or urban areas generally without distinction between formal or informal settlements.

In the recent time, in 2006, there has been a renewed effort to improve the living conditions and alleviate poverty of informal settlements dwellers in Lagos through land regularisation which is expected to grant formal title to every land owner within informal settlements and uncommitted government's land. On the one hand, this strategy is employed against the backdrop that it will facilitate access to official credit and markets, promote individuals' investment in housing, and lead to poverty alleviation. And on the other hand, to get Lagos rid of slums through eviction and demolition of squatter settlements on committed public land. Internationally, there have been arguments for and against the effectiveness of land titling as the main poverty alleviation strategy of the informal settlements dwellers. However from Lagos context, the study of Oshodi (2010) has shown the inadequacy of land regularization through land titling for poverty alleviation, as the intended beneficiaries have largely not interested in the policy.

Against this background, this paper argues that land title may be important for poverty alleviation, but titling is just one of the assets needed by the urban poor while tenure insecurity is just one of the numerous vulnerability contexts within which urban poor pursue their livelihoods. This argument is in line with the current global thinking that policy framework for poverty alleviation can no longer ignore inclusive strategy, which simultaneously takes into consideration poverty in all its dimensions as well as aspirations and needs of the poor. Therefore, this paper, through the lens of Sustainable Livelihood Approach examines the livelihoods of the urban poor. Specifically, it discusses in details various capitals upon which urban poor build their livelihoods. It however, briefly outlines vulnerability contexts within which urban poor pursue their livelihoods. This is taking as a starting point to comprehensively understand the issue of poverty in Lagos' informal settlements, which could help policy discourse at evolving sustainable poverty alleviation strategies.

2. Livelihood Approach and Poverty: Exploring the Literature

Globally, there is a general and renewed consensus that issues of poverty must be properly addressed if the sustainable human settlements and millennium development goals are to be attained. However, poverty has remained complex and contested phenomenon. However, current literature on poverty has shown that poverty is multi-dimensional and any strategy or approach aiming at poverty alleviation must be comprehensive enough to capture various dimensions of poverty. In line with this thinking, many approaches have been developed. One of such approaches is Livelihood Approach. Conceptually, as defined by Chambers and Conway (1991, p.6)

“A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term”.

According to Sanderson (1999) sustainability of individual or household livelihood is premised upon adequate access to income and other assets, which enable them to meet basic needs and to build up capabilities to resist or recover from shocks and stresses. Based on livelihood approach, several frameworks have been developed for livelihoods' analysis. Notable among these frameworks is Sustainable Livelihood Framework (SLF) (Carney, 1998, 1999; Scoones, 1998), which has been promoted by various development agencies and organisations such as DFID, UNDP, CARE and Oxfam. Also, various researchers have adapted the framework for understanding and analysing poverty in different contexts (Chambers and Conway, 1992; Ashley and Carney, 1999; Radoki and Lloyd Jones, 2002; Rakodi, 2002; Frankenberger and Drinkwater, 1999; Ellis, 2000). Although, the approach has a rural origin but in the recent years, it has been applied to understanding poverty in the urban context (Farrington et al., 2002; Beall and Kanji, 1999; Satterthwaite and Tacoli, 2002; Schütte, 2005). Sustainable livelihoods framework is a comprehensive approach which takes into consideration livelihoods assets, vulnerability context, livelihoods strategies, livelihoods outcomes, and policies, institutions and processes which influence livelihoods of the poor (Chamber, 1989; Chambers and Conway, 1992; Chamber, 1995; Carney et al., 1999; Kantor and Nair, 2005; Lyons and Snoxell, 2005). At the core of poverty lies livelihood. Poverty is linked to livelihood through five capitals (human, social, physical, financial and natural) (DFID, 1999). Livelihoods, on the one hand, are vulnerable to trends, shocks and seasonality and on the other hand, are mediated by institutions (both formal and informal) (UN-SPIDER, 2012).

Although the SLF has been criticised (see Norton and Foster, 2001; Krantz, 2001; Carney, 2003 for SLF criticisms), however, its application remains popular among various development originations earlier mentioned. It is not surprising because, it was purposefully developed for analysing poverty and developing effective poverty alleviation strategies (source). Also, its strengths as sustainable, people-centred, holistic and dynamic approach as well as its flexibility of adaptation have made it more popular than any other Livelihood Framework. As noted by Farrington et al. (2002), SLF can be used as an analytical tool or an overall development objective. In studying poverty, SLF provides a comprehensive platform for understanding the links between all factors that affect households' livelihoods ranging from how assets are secured, what they do with assets, what obstacles they come across while obtaining assets and who controls the assets on which livelihoods are based (Bebbington, 1999).

3. Research Methodology

This study adopts Sustainable Livelihood Framework as methodological and analytical framework to understanding poverty in informal settlements. More specifically, it explores, in details, livelihood assets and briefly explores livelihood vulnerability of the urban poor. The need to focus on livelihoods approach is based on the realisation that poverty is multi-dimensional. Sustainable Livelihoods Framework (SLF) however, provides a framework which integrates various dimensions of poverty. This framework enables a broad range of quantitative and qualitative research design and data collection methods. Consequently, for the purpose of this research, both quantitative and qualitative

data collection methods, which included household survey, households' in-depth interview, key informants' interviews, direct observation and published documents, were used. The study was undertaken in Lagos metropolis. Specifically, four (4) informal settlements (Ajegunle, Ipaja, Oko-Baba and Sari-Iganmu) were selected for further empirical study. In each settlement, a total of 100 questionnaires were randomly administered to households' heads giving a ground total of 400 questionnaires across the four settlements. In addition, a total of 40 interviews, including both households and key informants interviews were conducted. The materials presented in this paper are based on data from an on-going research which is looking at the factors, other than tenure, which influence livelihood of the urban poor. The analysis and discussions in this paper is majorly based on the quantitative data (400 questionnaires).

4. Livelihood Asset Portfolios of the Urban Poor

In this section, livelihood assets of the selected informal settlements and their residents are discussed under five sub-headings, corresponding to the five livelihoods' capitals- human, physical, social, financial and natural as contained in Sustainable Livelihood Framework (SLF).

5.1 Human Capital

The most important human capital examined includes household's demographic characteristics (marital status, household size, and age distributions and gender of the households' heads), literacy and education level, and employment and occupation status as presented in table 1. Household demographic structures and compositions play important role in income generation. The average household size is 6 persons. This is a little higher than the average for Lagos state of 5 persons as indicated in the Lagos State Household Survey Report (2012). Dependency ratio is particularly useful in assessing vulnerability; the higher it is, the more the likelihood that a household will be vulnerable to shocks and stresses, particularly economic and financial shock (Sanderson, 2000; Holmes and Jones, 2009). On the average, as shown in table 1, the number of people who are capable of working (excluding children, students and elderly who are above working age) is 2.95 while the average number of people that are actually working is 2.49. This is an indication that there is more economically active labour force which a household can mobilise for work than those who are currently working. Households' formation is predominantly male-headed with 87.8% of the households headed by male (table 2).

Number of People	0	1-2	3-4	5-6	7-8	9-10	>10	Mean
Household Size		6.6	32.6	30.8	13.3	8.6	8.7	6.0
Working Group	-	57.3	27.7	10.8	3.0	0.7	0.5	2.95
Actually working	1.8	67.0	22.7	6.8	1.2	-	0.5	2.49
Dependants	4.5	43.3	29.7	9	8	0.5	5.0	3.51

Table 1: Household Size and Dependency Ratio (Percentage, n=400)

Ability to read and write is an essential skill for the socio-economic and human development of any nation (Save the Children, 2012; OECD/Statistics Canada, 2011; UNESCO, 1998). As shown in Table 2, 89.8% of the respondents have formal education. A further disaggregation of the households heads with formal education into highest level of education reveals that almost half (49.8%) completed secondary school while 32.2% completed primary school. Only 18% completed tertiary education. Generally, in Lagos, the literacy rate is high. According to the Lagos state Household Survey 2012 Report, 89% are literate in any language while 84.7% can read and write in English. Literacy level in the four case study settlements is similar to the general literacy situation in Lagos. This was evident during the fieldwork for this study, as majority of the respondents were able to communicate effectively with the researcher in at least three different languages (English, *pidgin* and Yoruba) which the researcher has high proficiency in. In a way, this shows a group of human assets with potential to develop socio-economically, if given the right opportunity and the right environment to pursue their

individual livelihood objectives. However, it must be noted that knowing how to read and write, on the one hand, is important for individual and national development but, on the other hand, it is not enough. Quality of access and what is learnt is equally important.

	Names of Settlements				
	Ipaja	Ajgunle	Oko-Oba	Sari-Iganmu	Total
Households Heads Gender					
Male	81.0	91.0	89.0	90.0	87.8
Female	19.0	9.0	11.0	10.0	12.2
Education Status of the Households' Heads					
Formal Education	83	92	94	90	88.9
No Informal Education	17	8	6	10	10.2
Highest Level of Education					
Primary	42.2	22.8	40.4	23.3	32.2
Secondary	47.0	51.1	46.8	54.4	49.8
Tertiary	10.8	26.1	12.8	22.2	18
Occupational Status					
Self-employed	82.0	75.0	75.0	70.0	75.5
Paid work	15.0	17.0	20.0	20.0	18.0
Unemployed	.0	2.0	.0	10.0	3.0
Retired	3.0	6.0	5.0	.0	3.5
Nature of Main Occupation					
Formal	21.6	22.8	11.6	11.1	16.8
Informal	78.4	77.2	88.4	88.9	83.2
Adequate Access to Education (No)	71.0	89.0	64.0	57.0	70..3

Table 2: Household Head Demographic Characteristics

Physical access to school among the respondents is high; the majority of respondents claimed that members of their households, who are currently within school ages, have access to education. However, as reported by various respondents, their major challenges are associated with adequacy and affordability, which are majorly, manifested in the poor quality, poor infrastructure, inadequate classrooms, lack of libraries and laboratories, poor learning outcomes and cost of attendance. Therefore, in contrast to physical access, a majority (70.3%) of the respondents affirmed that their households do not have adequate access to educational facilities (table 2). Two-thirds of the households' heads are self-employed while only 18% is in paid work (see table 2). A further analysis indicates that 93.5% (including self-employed and paid workers) of the household heads are in employment while only 6.5% (including unemployed 3% and retired 3.5%) are not in employment. More than four-fifths of the employments are in the informal sector.

5.2 Physical Capital

In urban areas, housing is one of the most important physical assets that a household can possess, as it can be used productively and to ease the pressure on finances (Moser, 2006; Moser, 2007; Schütte, 2009). In fact it has been referred to be the commonest physical asset to many households either as a paying tenant, family owned, owner occupier or, even, as a squatter (Farrington et al., 2002). In the context of the current study, general assessment of housing tenure shows that a majority (77.5%) of the households are rent paying tenants (table 3). Houses in Ipaja and Sari-Iganmu are built with permanent materials (sandcrete blocks and mud). Larger proportions of the houses in Oko-Baba are built with temporary materials (wood/plank), and they can be generally referred to as shacks. In Ajgunle, housing constructions are a mixture of both permanent and temporary materials. The number of habitable rooms range from one to five rooms as shown in table 3. Habitable room, in this thesis, refers to number of rooms available for exclusive use of a household, excluding bathroom, toilet, kitchen and store since they are mostly shared among multiple households. For many households, the only habitable room serves multiple purposes, including bedroom (sleeping), living room, home-based activities and sometimes as the kitchen. Just like many other informal settlements

in developing countries, housing conditions in the four case settlements are generally poor. Overcrowding is noted at both household and community levels. The result is manifested in pressure on the available utilities, and poor housing and general environmental conditions. Conditions of sanitation facilities are generally poor. Ironically, as revealed by the household's survey, access to sanitation facilities is quite high among the residents with well over three-quarters of the households claimed to have access to bathrooms and toilets. However, challenges with toilets and bathrooms facilities are associated with inadequacy, poor quality and over-use. More than four-fifths, as indicated in table 3, of the households (including those who do not have access) confirmed not to have adequate access to bathroom and toilet facilities. On the average, as shown in table 4, one toilet is shared among 7 households while one bathroom is shared among 6.88 households. With an average household size of 6 persons, on the average 42 people share 1 toilet while about 41 people share 1 bathroom. In most cases, toilets and bathrooms are located away from the main buildings (outdoor) and the conditions are generally poor. Similarly, kitchen facilities are located outdoor with very poor conditions. Kitchen space is generally small and shared among multiple households, with an average of 7.29 households to a kitchen.

Housing Tenure	Names of Settlements				
	Ipaja	Ajgunle	Oko-Oba	Sari-Iganmu	Total
Owner occupied	8.0	31.0	12.0	5.0	14.0
Tenant	63.0	56.0	88.0	95.0	75.5
Family owned	29.0	13.0	.0	.0	10.5
Number of Habitable Rooms					
1	65.0	51.0	84.0	81.0	70.3
2	24.0	29.0	16.0	17.0	21.5
3	6.0	17.0	.0	2.0	6.3
4	3.0	2.0	.0	.0	1.3
5	2.0	1.0	.0	.0	.8
Adequate Access to Toilet and Bathroom					
Adequate access to toilet (No)	84	87	90	85	86.5
Adequate access to bathroom (No)	89	91	85	91	88.8
Connection to Water Supply (NO)	80.0	92.0	91.0	83.0	86.5

Table 3: Housing Tenure, Number of Habitable Rooms and Access to Sanitation Facilities (Percentage)

	Mean	Median
Number of households sharing toilet	7.00	6.00
Number of households sharing bathroom	6.88	6.00
Number of households sharing kitchen	7.29	7.00

Table 4: Average Households Sharing Toilet, Bathroom and Kitchen

Access to both physical/economic and social infrastructure is essential for overcoming poverty and vulnerability. Electricity is mainly provided by Power Holding Company of Nigeria (PHCH). All the four case study settlements are connected to the public power (electricity) supply. However, the major challenge face by respondents is associated with the inadequacy of power supply, which is manifested in poor quality (low voltage) and inefficient (irregular), and high cost (unaffordable) of the services. Electricity in Nigeria is erratic. On daily basis, as expressed by many respondents and equally confirmed through personal observation, there are frequent power cuts, which often hinders productivity and livelihoods. Consequently, the use of generators, as alternative source of power supply, is common in the four case settlements.

Water is essential for human life and health, production and livelihoods (World Water Forum, 2000; Brauch, 2009). Across the four settlements, most (86.5%) of the houses are not connected to any

water supply system (table 3). Consequently, a majority of the respondents buy potable water from water vendors which come at a higher cost. Also, since a majority of the houses are not connected to water supply system, a lot of time is wasted, mostly by women and children who are mostly responsible for fetching water. In general, inadequate access to water supply is associated with quality, cost and time spent.

Many of the houses are not connected to drainage system and access roads. Available roads are mostly not tarred, and they are without street light and drainage systems, and they are in poor condition. Where drainages are available, they are mostly opened, blocked and dilapidated. The case study settlements, just like many other informal settlements in Lagos, are not adequately covered by waste collection services. This study reveals that there are no adequate healthcare facilities in the four settlements. However, there are chemists' shops where residents get treatments and buy drugs, mostly, without prescriptions.

5.3 Social Capital

Social capital could come in form of social networks, relationships, reciprocity, kindred (Putnam, 1993). In this study, social capital is operationalised as social networks and membership of organisations, social relations and feeling of trust, and sources of information and communication. In the current study, respondents were asked if they or any member of their households belong to any forms of organisations or associations. The result is presented in table 5

Names of Associations/Organisations	Names of Settlements				Total
	Ipaja	Ajegunle	Oko-Oba	Sari-Iganmu	
Co-operative/thrift and credit society	33.0	29.0	35.0	37.0	33.5
Community development Association	34.0	48.0	25.0	20.0	31.8
Religious association	84.0	77.0	78.0	80.0	79.8
Youth organisation	5.0	25.0	30.0	20.0	20.0
Political Party	9.0	11.0	7.0	12	9.8

Table 5: Members of Associations/Organisations (Percentage)

From table 5, about one-third belongs to Co-operative/thrift and credit society, 31.8% belongs to community development association, one-fifth belongs to youth organisation, 9.8% belongs to political party and about four-fifths belongs to religious organisation. Religion remains the most populous organisation. Place of worship is not just a place to only fulfil religious or spiritual obligations but, it is also a place to seek help and share other people's burdens. As noted by a respondent:

"...in our church, we have different groups. We have women, men, youth, working class, those looking for jobs and prayer groups....They give information and help people with jobs. In fact, the current job my first born is doing, someone in the church helped him."

Only a small proportion of the sampled households have any of their members in political party. The reasons, as noted by various respondents, why they did not join any political party was because they consider Nigerian politics as a do-or-die (dirty and dangerous), and secondly, they feel neglected and they have been severally disappointed by the political class and government at all levels. From observations, as an outsider, the level of interactions among residents seems high. However, this is not an indication of an optimal level of trust. Felling of trust was measured through residents' willingness to leave children and keys with their neighbours while they are away. About three-quarters of the respondents will leave their children with neighbours while they are away. Some of those who will leave their children with neighbours however noted that their willingness depends on the particular neighbours and not just any neighbour. For instance, a respondent expressed:

“There are few people I can leave my children with in this area. We have been together for long. I know them inside-out, including their families and they also know me very well.”

On the contrary, willingness to leave their keys with neighbours shows a different trend as only 39.5% of the respondents will leave their keys with their neighbours while a majority (60.5%) will not leave their keys with neighbours. This is attributed to safety and security reasons. Issue of privacy was equally noted by some respondents. This is understandable since a majority of the households occupy only one room; they consider it as a personal space which is meant for only the family members. This study reveals that respondents have access to various sources of information and communication. However, the use of a particular source as the main source of information largely depends on the nature of the information. For instance, Information about government policy on the larger society, such as economic policy, often comes from radio and television. Information about government policy as it affects their communities largely comes as rumours from neighbours, often described as ‘mouth radio’, and later places of worship when such information become prayer points and announcements.

4.4 Financial Capital

In urban areas, possession of financial asset is important in accessing and accumulating other livelihood assets. In this study, financial capital is measured as household’s monthly income, savings and ability to meet basic needs, and access to credit and sources of credit. Household income is essential for maintaining sustainable livelihood. Living in an urban area is characterised by a high level of commoditization which means urban dwellers have to pay for most of the goods and services consumed (Moser, 1998; Rakodi and Lloyd-Jones, 2002).

Monthly Income in Naira (=N=)	Lagos State Household Survey (n=10,000)		Informal Settlements (n=106)	
	Percentage	Cumulative Percentage	Percentage	Cumulative Percentage
20,000 and Below	27	27	60.4	60.4
20,001 - 40,000	37	64	21.7	82.1
40,001 – 60,000	21	85	15.1	97.2
60,001 – 80,000	8	93	2.8	100
80,001 – 100,000	5	98	-	-
Above 100,000	2	100	-	-

Table 6: Comparison of Lagos State Household Survey Monthly Income and Informal Settlements Household’s Monthly Income Group

As shown in table 6, a majority (60.4%) of the households have a monthly income of =N= 20,000 and below. In fact, majority of those who earn =N=20, 000 and below actually earn between =N=7,500 and =N=17, 000 which is lower than the national monthly minimum wage of =N=18, 000. Precisely put, about half of the sampled households have monthly income lower than the national monthly minimum wage. It must be noted that the national minimum wage has been described, by Nigerian workers, as not adequate for a living.

Table 7: Savings and Ability to Satisfying Household’s Needs (Percentage)

	Names of Settlements				
	Ipaja	Ajegunle	Oko-Oba	Sari-Iganmu	Total
Difficulty in Satisfying Food Needs (Yes)	83.0	80.0	73.0	70.0	76.5
Difficulty in Paying House Rent (Yes)	85.7 (n=63)	83.9 (n=56)	73.9 (n=88)	76.8 (n=95)	80.1 (n=302)
Difficulty in Satisfying Other Needs (Yes)	84.0	85.0	80.0	81.0	82.6
Ability to Save (No)	79	75	57	61	68

Table 7 reveals that a majority (76.5%) of the sampled households find it difficult to satisfy food needs while (80.1%) find it difficult paying their rents and 82% find it difficult to satisfy other needs. As shown in table xx, majority (68%) are unable to save. This is not surprising as many of them are already experiencing difficulties in meeting their basic needs. As expressed by a respondent, when asked if he is able to save money after meeting all basic needs:

“Savings, how? How do I save when I don’t even have enough money to put food on the table for the family, pay children school fees and some other important family commitments?”

Inability to meet basic needs and save is associated with the irregular and inadequate income of the majority. In the absence of regular and adequate income, access to credit facilities becomes essential to livelihood security (Meena and O’Keefe, 2007). As shown in this study, there is limited access to formal (banking) credit source. Hence, there is minimal use of loan from formal financial institution as source of income among the residents. However, a majority of the sampled households do have access or prefer to access credits from informal sources like relatives, friends, cooperative, and thrift and credit society (ajo). The reasons attributed to this include ease of access, little or no interest rate, and convenient repayment plan. It was however noted that access to informal credit, particularly from friends and relatives is often not reliable because they (friends and relatives) also have limited financial capability to always offer such help. The current study equally reveals that access to informal credit is not only limited to cash. Credits also come in form of goods and services. Question on how households cope with difficulty in meeting basic food needs indicates that a significant proportion of the households do take food stuffs on credits. This is achieved by building relationships and trusts with different food stuffs retailers.

4.5 Natural Capital

In livelihood analysis, the importance and contributions of each component of natural capital differ between rural and urban environments. It is generally believed that natural capital is less important to livelihoods of the urban poor. However, as noted by (Farrington et al., 2002) natural capital and services offered by natural capital are becoming important to urban poor’s livelihood. Within the context of the current research, the identified natural capitals which are used in the livelihood of the residents of the case study settlements include water bodies and refuse dump.

Lagos is a coastal urban agglomeration. Hence, water is its most significant topographical feature. In fact, water bodies, ranging from sea, lagoons, rivers, creeks and swamps, cover about 40 percent of its total landmass. Ajegunle and Oko-Baba communities have direct access to water bodies. Oko-Baba has direct access to Lagos lagoon while Ajegunle has direct access to Ogun River. The water bodies are used for different purposes based on local circumstances. For instance, in Ajegunle, Ogun River is used for purposes such as bathing, sanitary, washing (cloths and plates) and fishing. Though, as noted by various respondents, fishing is not done at commercial quantity, but it does form part of residents’ livelihood strategies for meeting food needs. Lagos lagoon occupies a central position in the existence of Oko-Baba sawmill and the survival of Oko-Baba residents. The lagoon is used for transporting logs from the hinterland, and for logs storage before they are cut into timber/plank of different sizes at Oko-Baba sawmill. Equally, the lagoon is used for sand mining, though on an informal and small scale levels but it does serve as source of livelihood for some of the residents as noted by a key informant. It is also used as sanitary facility. Sari-Iganmu is very close to a refuse dump site. Although it must be noted that the settlement has existed before the dump site but it has become a dominant feature on the Northern part of the settlement. The dump site generates income opportunities for some categories of people- ‘area boys’ (street boys), scavengers and traders who use the place to display their goods as a result of its closeness to a major road (Lagos-Badagry Expressway) as well as a major transport node.

5. Livelihood Vulnerability of the Urban Poor

Urban poor pursue their livelihood’s objectives within political, social, economic and environmental contexts which make them vulnerable to poverty. Often, vulnerability manifests in form of trends,

shocks and seasonality (DFID, 1999). As reveals in this study the major trends which have influence on urban poor livelihoods include urbanization and population trends, economic trend and trend in climate change. These trends however reinforce one another.

Urbanisation is a global phenomenon resulting into increase in the number of people living in the urban areas. However, in Sub-Saharan Africa, urbanization has been identifies as one of the major trends affecting urban poor livelihoods (Hedrick-Wong and Angelopulo, 2011). Though urbanisation on its own is not a problem, but when poorly managed, which is the case in many developing countries including Nigeria, it results into problems. The results of poorly managed urbanisation is evident in Nigerian cities as epitomised by the condition of urban poor in Lagos. Over the years, particularly in the last five or six decades, Lagos has been experiencing unprecedented urban expansion and population growth. As the pace of urban population continues to increase coupled with the poor national economic situation, the challenges of providing employment, basic infrastructure and adequate and affordable housing to meet the need of the ever increasing urban population persist and becoming intractable (UNECE, 2009). Over the years, Lagos has expanded from core areas unto marginal areas, ecologically fragile sites and hazardous locations such as flood plain, swampy areas, and canal setbacks, where the residents are exposed to climate change related hazards, particularly flood. Majority of the population in Lagos now live in informal settlements under precarious environmental and housing conditions, and engage in informal economic which offers irregular and inadequate income. As reveals in this study, the working conditions and working environment as well as the living environment of the urban poor expose them to occupational and environmental health risks. These on the one hand often reduce their ability to labour and earn income and on the other hand increase household expenditures, particularly on healthcare.

Furthermore, shock as an essential component of vulnerability has profound influence on individual and households' livelihood sustainability, and poverty alleviation. The summary of the identified shocks, as expressed by the respondents in the study settlements, is presented in table 8

Shocks	Frequency	Percentage
Threat eviction or actual eviction (Yes)	241	60.3
Loss of property (Yes)	197	49.3
Loss of Social Network (Yes)	206	51.5
Loss of Job/ Unemployment (Yes)	219	54.8
Flooding (Yes)	270	67.5
Violence and crime (Yes)	252	63.0
Pollution (Yes)	307 (n=398)	77.1
Diseases/ Sickness/Health problems (Yes)	254	63.5

Table 8: Vulnerability to Shocks

The above table shows various dimensions of shocks influencing urban poor livelihoods in Lagos informal settlements. Majority of the residents are vulnerable to pollution, including land, water, air and noise pollutions. Incidence of pollutions in the study areas is associated with the lack of adequate facilities, particularly sanitation facilities. About two-thirds of the respondents are vulnerable to health problems. Common health problems among the residents include malaria, diarrhea and typhoid. These illnesses are associated with the prevailing poor and inadequate sanitary facilities, and the general poor environmental conditions in the study areas. In the past few years almost every part of Lagos has experienced, and has been affected by flood incidence. As reveals in this study, over-two-thirds of the respondents have experienced flood incidence. The effects of flood incidence on urban poor livelihoods are enormous. On the one hand, flood hazards worsen the already vulnerable and impoverished conditions of the urban poor. On the other hand, hinder their capabilities to move out of poverty. As noted by two different respondents:

“I cannot say this is the total amount of what I lost to flood between last year (2011) and this year but, the point is that many of my properties, I mean my household items, were damaged, and I am yet to replace most of them because I have no money to do so.”

“I do not know what to do neither do I know where to move to, everything I have laboured for over the years, including my certificate have been lost to flood that ravaged last two weeks. Now I am empty, left with nothing.....I am practically back to square one, where do I even start from.”

The effects of flood on urban poor livelihood, as expressed by many respondents include damage to properties and community infrastructure, damage and loss of households' productive and non-productive assets, disruption of economic activities, loss of human life and social networks, and ill health and injury

6. Conclusion

This paper, through the lens of Sustainable Livelihood Framework, has detailed various capitals that together construct asset portfolios and livelihoods of the urban poor in Lagos. The study reveals that urban poor have unbalanced and inadequate access to both public and private livelihoods assets. The inadequacy is manifested in both the quantity (generally limited) and quality (generally poor) of livelihoods assets. Basic infrastructure and urban services are physically available to the residents of the case study settlements. However, the quality remains poor and access to them remains inadequate. Access to urban services comes at higher costs to the urban poor, relative to their income; hence, affordability becomes a major challenge. This is against the backdrop that majority earn below the national minimum wage, which is not adequate for a living. In the absence of adequate cash income, credit as source of income becomes important. Unfortunately, as shown in this study, a majority of the residents do not have access to credits from financial institutions; hence use of formal credit as source of income is limited. However, they do have access to credit inform of cash, goods and services from informal sources. On human capital, two contrasting conclusions can be made. On the one hand, a combination of high dependency, relatively low level of highest education attainment, high incidence of unemployment, ill health, currently prevalent among household's members, are indications of poor and weak human assets. On the other hand, a high number of household's members within working age group points to potential strong human capital base that individual household can mobilize for income generating activities if the general employment situation and education system in the country improve.

This study further reveals that urban poor in Lagos informal settlements pursue their livelihood objectives amidst vulnerability contexts, which further impoverished them. Livelihoods' trends of the urban poor are associated with uncoordinated urban expansion, climate related hazards and poor national economic performance. Major livelihoods' shocks include threat of eviction, loss of property, loss of social network, unemployment, flooding, violence and crime, pollution and health problems. These shocks however reinforces one another thereby worsen the condition of the urban poor. Although it must be noted that occurrence of many of these shocks are not in any way limited to informal settlements, however, urban poor are disproportionately vulnerable and affected because they are already experiencing multiple deprivations and exclusions in terms of infrastructural and urban services provisions. More importantly their livelihood is based on unbalanced and inadequate assets. Also, these vulnerabilities are, often, either not understood by policy makers or they are deliberately over look, as not important, when developing poverty alleviation strategies. Hence, there is a disconnection between poverty reduction policies, and reality, aspirations and needs of the poor.

This study therefore suggests that one important element in reducing poverty is a policy framework that guarantees inclusive provision of livelihoods assets and at the same time reduces livelihood's vulnerability. It however recognises that provision of assets may not be enough to achieve the desired poverty reduction; right of access, which is also currently missing, to wide range of livelihood's assets, including right to city, for the urban poor is of necessity. This view is in line with the current global thinking that policy framework for poverty alleviation can no longer ignore inclusive strategy, which simultaneously takes into consideration poverty in all its dimensions as well as aspirations and needs of the poor.

References

Ashley, C. and Carney, D. (1999) Sustainable livelihoods: Lessons from early experience'. London.

- Barry, M. and Ruther, H. (2001) 'Data Collection and Management for Informal Settlement Upgrades', International Conference on Spatial Information for Sustainable Development. Nairobi, Kenya, 2–5 October 2001. pp. 1-13.
- Bebbington, A. (1999) 'Capitals and Capabilities: A Framework for Analysing Peasant Viability, Rural Livelihoods and Poverty', *World Development*, 27(12), pp. 2021-2044.
- Brauch, H.G. (2009) *Facing Global Environmental Change: Environmental, Human, Energy, Food, Health and Water Security Concepts ; with 135 Tables*. Springer Berlin Heidelberg.
- Bujanda E, J.V. and Arrieta de Bustillos, L. (2005) 'Review of Sustainable Informal Settlements Processes in Latin America', in L.Santosa, Bustillos, L.A.d. and M.Napier (eds.) *Sustainable Livelihoods in the Informal Settlements*. Rotterdam: CIB General Secretariat, pp. 1-3.
- Carney, D., Drinkwater, M., Rusinow, T., Neefjes, K., Wanmali, S. and Singh, N. (1999) *A Brief Comparison of the Livelihoods Approaches of the UK Department for International Development (DFID), CARE, Oxfam and the United Nations Development Programme (UNDP)*. London.
- Chamber, R. (1989) 'Vulnerability: How the Poor Cope', *IDS Bulletin*, 20 (2), pp. 1-7.
- Chamber, R. (1995) 'Poverty and Livelihoods; Whose Realities Count? ', *Environment and Urbanization*, 7(1), pp. 173-204.
- Chambers, R. and Conway, G. (1992) *Sustainable Rural Livelihoods: Practical Concepts for the 21st Century*. Brighton.
- Devas, N. (2004) *Urban governance, voice, and poverty in the developing world*. London Earthscan Publications.
- DFID (1999) *Sustainable Livelihoods Guidance Sheets*. London. [Online]. Available at: http://www.livelihoods.org/info/guidance_sheets_pdfs/section4_1.pdf (Accessed: 24 May, 2013)
- Farrington, J., Ramasut, T. and Walker, J. (2002) *Sustainable Livelihoods Approaches in Urban Areas: General Lessons, with Illustrations form Indian cases*. London.
- Forae, O.F. (2011) 'An Appraisal of Poverty Alleviation Programmes in Nigeria', *JORIND*, 9(1), pp. 296-304.
- Frankenberger, T. and Drinkwater, M. (1999) *Household livelihood security: A Holistic Approach for addressing Poverty and Vulnerability*.
- Hedrick-Wong, Y. and Angelopulo, G. (2011) *The challenges of urbanisation in sub-saharan Africa: A Tale of three cities*. Worldwide, M. [Online]. Available at: www.masterintelligence.com/.../MasterCard%20Insights%20report%20-%2015/06/2013. (Accessed: 15/06/2013).
- Holmes, R. and Jones, N. (2009) *Gender Inequality, Risk and Vulnerability in the Rural Economy: Re-focusing the Public Works Agenda to Take Account of Economic and Social Risks*. [Online]. Available at: www.odi.org.uk/resources/docs/6070.pdf (Accessed: 07/05/2013).
- Hove, T.V. (2010) *The world's largest cities and urban areas in 2006 and 2020*. City Mayors Statistics. Available at: http://www.citymayors.com/statistics/urban_intro.html (Accessed: 30/05/2011).
- Kantor, P. and Nair, P. (2005) 'Vulnerability Among Slum Dwellers in Lucknow, India: Implications for Urban Livelihood Security', *International Development Planning Review*, 27(3), pp. 333-358.
- Lewu, M.A.Y. (undated) 'A Critical Appraisal of Poverty Alleviation Programmes in Nigeria', in Babatolu, J.S. and Ikuejube, G. (eds.) *Perspectives on Contemporary Socio-political and Environmental Issues in Nigeria*. Ondo: School of Arts and Social Sciences, Adeyemi College of Education Ondo, Nigeria, pp. 157-174.
- Lyons, M. and Snoxell, S. (2005) 'Sustainable Urban Livelihoods and Marketplace Social Capital: Crisis and Strategy in Petty Trade', *Urban Studies*, 42(8), pp. 1301-1320.
- Meena, H.E. and O'Keefe, P. (2007) *Sustainable Livelihoods in the Context of Vulnerability and Adaptation to Climate Change Impacts in Tanzania: A Case Study of Kilimanjaro Region*. [Online]. Available at: www.nlcap.net/.../032135.070212.TAN.CON-02.Output9.SLA_frameworko (Accessed: 18/06/2013).
- Moser, C.O.N. (1998) 'The asset vulnerability Framework: Reassessing Urban Poverty Reduction Strategies', *World Development*, 26(1), pp. 1-19.
- Moser, C.O.N. (2006) *Asset-Based Approaches to Poverty Reduction in a Globalized Context: An introduction to asset Accumulation Policy and Summary of Workshop Findings*. Washington, DC: The Brookings Institution. [Online]. Available at: www.brookings.edu/~media/research/files/.../11/.../200611moser.pdf (Accessed: 20/05/2013).
- Moser, C.O.N. (2007) *The Construction of an Asset Index Measuring Asset Accumulation in Ecuador*. Chronic Poverty Research Centre (Accessed: 20/05/2013).

- Mundy, P. and du Plessis, J. (eds.) (2010) *Count me in Surveying for Tenure Security and Urban Land Management*. Nairobi: United Nations Human Settlements Programme (UN-HABITAT).
- Odero, J., Natsume, Y. and Wakayama, S. (2009) 'The Urban and Architectural Space of the Slums in Kenyan Literature Space in the urban trilogies ', *Journal of Architecture and Planning (Transactions of AIJ)*, 74(638), pp. 993-1001.
- OECD/Statistics Canada (2011) *Literacy for Life: Further Results from the Adult Literacy and Life Skills Survey*. Paris, France: OECD Publishing. [Online]. Available at: <http://dx.doi.org/9789264091269-en> (Accessed: 21/05/2013).
- Owuor, S.O. (2003) *Rural Livelihood Sources for Urban Households: A study of Nakuru Town, Kenya (ASC Working Paper 51/2003)*. Leiden.
- Putnam, R.D. (1993) 'The Prosperous Community: Social Capital and Economic Growth', *The American Prospect*, Spring, pp. 35–42.
- Radoki, C. and Lloyd Jones, T. (eds.) (2002) *Urban Livelihoods: A People-centred Approach to Reducing Poverty*. London: Earthscan.
- Rakodi, C. (2002) 'A Livelihoods Approach - Conceptual Issues and Definitions', in C.Rakodi and T.Lloyd-Jones (eds.) *Urban Livelihoods: A People-centred Approach to Reducing Poverty*. London: Earthscan, pp. 3-22.
- Rakodi, C. and Lloyd-Jones, T. (eds.) (2002) *Urban Livelihoods: A People-Centred Approach to Reducing Poverty*. London: Earthscan.
- Sanderson, D. (1999) *Household Livelihood Security in Urban Settlements*. London.
- Sanderson, D. (2000) 'Cities, Disasters and Livelihoods', *Environment and Urbanization*, 12(2), pp. 93-102.
- Save the Children (2012) *Ending poverty in Our Generation: Save the Children's vision for a post-2015 Framework* London: Save the Children. [Online]. Available at: <http://www.savethechildren.org.uk/resources/online-library/ending-poverty-our-generation>.
- Schütte, S. (2009) *Livelihoods of the Urban Poor in Afghanistan – Conceptional Issues and Review of Literature*. Afghanistan Research and Evaluation Unit (AREU). [Online]. Available at: www.geo.fu-berlin.de/.../Livelihoods_of_the_Urban_Poor_Concepts (Accessed: 20/05/2013).
- UN-HABITAT (2006) *State of the World's Cities 2006/2007– The Millennium Development Goals and Urban Sustainability: 30 Years of Shaping the Habitat Agenda*. Nairobi: Earthscan.
- UN-HABITAT (2007) 'A Look at the Urban Informal Economy ', *Habitat Debate*, 13(2), pp. 1-24.
- UN-HABITAT (2008) *State of the world's Cities Report 2008/9: Harmonious Cities*. London.
- UNDP (2002) *Kenya Human Development Report 2001: Addressing Social and Economic Disparities*. Nairobi.
- UNECE (2009) *Self-Made Cities: In Search of Sustainable Solutions for Informal Settlements in the United Nations Economic Commission for Europe Region*. New York and Geneva: United Nations.
- UNESCO (1990) *Functional Literacy in Eastern and Western Europe*. Hamburg: UNESCO Institute for Education.
- UNESCO (2012) *Education and Skills for Inclusive and Sustainable Development Beyond 2015*. UNESCO. [Online]. Available at: en.unesco.org/post2015/sites/.../files/Think%20Piece%20Education.pdf (Accessed: 20/01/2013).
- UNESCO (1998) *World Declaration on Higher Education for the Twenty-First Century: Vision and Action*. UNESCO. [Online]. Available at: www.unesco.org/education/educprog/wche/declaration_eng.htm (Accessed: 20/05/2013).
- UNHSP (2010) *Informal Settlements and Finance in Dar es Salaam, Tanzania*. Nairobi: Programme, U.N.H.
- World Water Forum (2000) *Second World Water Forum, Ministerial Declaration of The Hague on Water Security in the 21st Century*. Hague. [Online]. Available at: www.idhc.org/esp/.../Agua/Second_World_Water_Forum%5B1%5D.pdfCached (Accessed: 01/06/2013).

Rio de Janeiro's transformations for the mega-events: history, urban regeneration and grassroots creative experiences in the port area.

Luiza Farnese L. SARAYED-DIN, Faculty Built Environment, University of Malaya, Malaysia

Faizah Binti AHMAD, Faculty Built Environment, University of Malaya, Malaysia

Rosilawati Binti ZAINOL, Faculty Built Environment, University of Malaya, Malaysia

Abstract

Trying to answer the question 'For whom are the urban transformations?' associated with the host of the World Cup 2014 and Olympics 2016, this paper aims to present the history, urban interventions and potential of learning from grassroots creative experiences within Rio de Janeiro's port area. In doing so, this descriptive effort wishes to collaborate with the major discussion about the challenges and opportunities of city making in Global South cities.

1. Introduction

Porto Maravilha is returning a **historical treasure to Rio**, and at the same time integrating areas with great housing, cultural and economic potential, which will be **transformed** into an **example of modernity**. (CEDURP, 2013b)

In the context of huge city transformations associated with the host of the World Cup 2014 and Olympics 2016, this paper aims to present the urban regeneration project that is taking place in Rio de Janeiro's port area: the *Porto Maravilha* project. This descriptive effort focuses on the overall contingency of these recent urban transformations presenting the historical relevance, abandonment period and socially excluded population of Rio de Janeiro's port area. Casting a critical eye towards official phrases such as the one quoted in the beginning of this session the paper explains: firstly, why the port area is considered the historical treasure of Rio de Janeiro; secondly, the sequence of urban interventions that transformed the port throughout the years; and thirdly, the different discourses and interests behind the idea of transforming the area into an 'example of modernity'.

Trying to answer the question 'For whom are the urban interventions?' and based on the analysis of official documents and ten days of observation and application of semi-structured interviews with key stakeholders, this paper briefly presents both an overview of the expected social impact of the mega-events in Rio de Janeiro port area and two grassroots creative experiences that are already taking place within this area. However, it is important to highlight that these two experiences are presented having in mind the postcolonial urban studies claim of an urban theory able to learn from cities everywhere (McFarlane, 2011, Robinson, 2006, Robinson, 2011) and conscious of the role of creativity in city-making (Sandercock, 2003, Landry, 2008) . Fleshing out the importance of learning from these experiences, which for a long time were the few initiatives that have encouraged the dialogue between this forgotten area and the city, this work discusses the revitalization process related with mega-events and underscores the potential for learning from creative urban experiences in both Rio de Janeiro and other cities of the 'Global South'.

2. Historical treasure: Rio de Janeiro and its port area

Rio de Janeiro dates back to 1565. Slowly spreading along the seashore and developing on top of, and limited by, four hills, the city took almost 300 years to properly blossom. The turning point happened with the arrival of the entire Portuguese Court in 1808 and consequent transference of the Kingdom of Portugal from Lisbon to Rio de Janeiro, Brazil (Sigaud, 2000). Escaping from the Napoleonic forces in Europe, the King of Portugal declared Rio de Janeiro the new capital of the United Kingdom of Portugal, Brazil and Algarves and implemented huge transformations within the city. From allowing the commercial exchanges between Brazil and all nations considered friends of Portugal to urbanizing the city to properly house the Portuguese Court, the presence of the King John VI propelled Rio de Janeiro's development, particularly surrounding the port area where the city was born.

Economically, other than the services related to the court, the city's development has been based on three main activities. The historical compendium book *História dos Bairros: Saúde, Gamboa e Santo Cristo* details each of these economic activities and how they have influenced Rio de Janeiro's urban landscape, particularly focusing on the history of three neighborhoods that formed the port area, and consequently the beginnings of the city. One of the most important activities was the exploration of regular stones for the construction of houses and for doing earthworks in many of the native mangroves areas that used to bring mobility difficulties and harden the city connections. These quarries were actually something broadly available, since they used the hills that once limited and was within the city. The second economic activity was the coffee trading. Following the arrival of the Portuguese Court, the coffee started being produced on a large scale, which were then stored and distributed via Rio de Janeiro's quays. As Cardoso et al. (1987) have mentioned, with the advent of the coffee, quays and warehouses multiplied in the region (Cardoso et al., 1987, author's translation). The expansion of the coffee culture throughout Brazil during the 19th century brought wealth to Rio de Janeiro, allowing then investment in transport, such as train, services and urban infrastructure to support the booming urban population.

The third activity was associated precisely with maritime commercialization, more specifically with the quays and associated warehouses, which previously had developed slowly throughout the years and that subsequent to the royal family arrival, had flourished. Initially inhabited by fisherman and slaves dealers, the quay area became a place of smithies, warehouses, in particular coffee warehouses, which were built at the seashore and more often on the land reclaimed from the sea. Associated with the construction of the Railway station and train lines connecting this port area with the countryside, the area's infrastructure had reached breaking point. As indicated by Cardoso et al. (1987), after 10 years of the distribution of imported products via Rio de Janeiro and the exportation of Brazilian products, mostly coffee, through the same quays, the port area of Rio de Janeiro became developed, diverse and populated. This population, in turn, was mainly comprised of workers from the quays and the industries located in the local area due to the available infrastructure.

However, Cardoso et al. (1987) highlighted that although Rio de Janeiro's vocation to be a port area and all the quays and commercialization in the region, the area was not properly equipped to be described as such. Despite the implementation of small initiatives such as the D Pedro II Docks and Maritime Station, launched respectively in 1875 and 1879, the establishment of a proper port area only happened at the beginning of the 20th century, in the context of other urban regeneration processes around Rio de Janeiro. Featuring among the world's 15 biggest ports at that time (Cardoso et al., 1987), in 1903 the port finally received the necessary financial and technical investment from the federal government in a contract with a British company and support from the Technical Commission for the Port Constructions.

Launched in 1910, the port was then considered the symbol of the huge transformations of Rio de Janeiro's old coast. Being built on a vast piece of land reclaimed from the sea its construction has 'permanently distanced the old maritime neighborhoods from the sea, and the land reclaimed areas have never truly integrated itself with the old areas' (Cardoso et al., 1987, author's translation). More importantly, the port construction and associated urbanization have consolidated the grassroots character of the area. For instance, it was within these maritime neighborhoods that the port, mill and warehouse's workers managed to live and mingle, and was there that the first slum of Brazil appeared [which was called *Favela Hill* and is the reason for all the slums areas in Brazil being called *favelas*].

The remarkable character of the port area population is what explains the area being the cradle of samba and other cultural grassroots manifestations that are so associated with the Brazilian melting pot of culture, races and beliefs. The catholic celebrations and other cultural traits from the Portuguese and some Spanish have mixed with the African roots of the black people that were also historically connected with the area. Being the place where the slave market was established, where the African Gods has been worshiped [in Pedra do Sal, place that till nowadays hosts samba and other cultural manifestations] and where most of the slaves and free men worked and lived, the port area has also been known as 'Little Africa' [*Pequena Africa* in Portuguese]. Actually, all the urban interventions and the lack of them have somehow fostered the segregation of this area from the rest of the city, as well as the crystallization of the port area of Rio de Janeiro as the living history of Brazil and metonym of the country's mixture.

2.1 The urban interventions and the abyss between port area and city

If we want to work towards a politics of inclusion, then we had better have a good understanding of the exclusionary effects of planning's past practices. (Sandercock, 2003)

As a consequence of all the above-mentioned transformations that Rio de Janeiro had witnessed throughout the 19th century, the capital of the new Brazilian republic was facing many urban issues and had its first comprehensive urban renovation process in the beginning of the 20th century. Besides the economic, urban and social changes boosted by the arrival of the royal family, the slavery abolishment in 1888, the Republic proclamation in 1889 followed by increasing migration to the city, has accelerate the need for Rio de Janeiro's 'modernization, sanitation and civilization' (Cardoso et al., 1987, author's translation). Known as Pereira Passos's Renovation, due to the name of Rio de Janeiro's mayor at that time, from 1902 to 1906 urban renovation focused on widening existing roads and building new roads – especially in the city center, and the construction of the port and revitalization of its surrounding area. Besides these urban interventions, which were inspired by Haussmann's Paris, the government has created rules and regulations changing and disciplined the life within the city, followed by sanitation campaigns against such outbreaks as yellow fever and bubonic plague.

History shows that the Pereira Passos's urban interventions have been based on large demolition projects as well as the eviction of a huge number of people from the city center and port area. However, 'regardless of the destruction of a big share of the houses in the area, the old maritime neighborhoods have absorbed a huge population of low income earners displaced during the demolitions that were taking place in the city' (Cardoso et al., 1987, author's translation). Therefore, in addition to the naval workers immigrants, mostly Portuguese and Spanish, and the black population that used to be based in these maritime neighborhoods, who after the abolishment of slavery, also remained in the area, the port area received the huge number of evicted people from the Pereira Passos's interventions. The *Favela Hill*, which is known as *Providência Hill*, is an example of that, since the number of deprived houses increase from 100 in 1904 to 1458 in 1933 (Cardoso et al., 1987).

Additionally, despite the aimed revitalization of the port area, these urban interventions of the beginning of the 20th century marked the physical separation between the port and the city. For instance, the two large avenues constructed on the reclaimed land have materially 'delimited the differences between the 'modern' and previous occupation' (SMU & IPP Prefeitura da Cidade do Rio de Janeiro, 2003)

It is important to highlight that although this urban renovation is considered the first comprehensive plan with this objective for Rio de Janeiro, other initiatives have happened before. For instance, due to the precarious constructions and disorderly occupation, around 1870 urban works and renovation projects were necessary in these hill settlements with some of them having been done to avoid landslides. Moreover, the urban development of the second half of 19th century has opened up streets and other smaller thoroughfares towards and within these hills. However, the vertiginous increase of population and construction on these hills did not follow on the same path as the urban services and required infrastructure. It is due to the fact that most of the investments at that time was focusing on the maritime coast (Cardoso et al., 1987). Another initiative in urban 'renovation' happened during the administration of Rio de Janeiro's mayor Barata Ribeiro who from 1891 to 1893 has focused on evicting the unsound collective habitations in the center of the city and ended up removing a lot of poor people from their homes.

Other than the Pereira Passos's urban interventions, Rio de Janeiro have passed through two more urban plans, called Apache Plan [1926] and Doxiades [1960 to 63], that have not impacted the situation of the port area, and the construction of *Presidente Vargas Avenue* and the *Perimetral Highway* which have magnified the physical urban divide between port and city. From the 1940 to the 1970, the functionalism way of thought has influenced the urban interventions in Rio de Janeiro and the construction of these two large avenues are a symbol of that. At more than 3.5 kms in length and connecting the *Mauá Square* at the heart of the 'old Rio' and the north region of the city, the federal president Getúlio Vargas constructed the 4 carriageways avenue in 1940, as a way of modernizing the capital of Brazil at that time. The *Perimetral*, on the other way, has its construction started in the 1950's but was only completed at the beginning of 1970, after Rio de Janeiro had lost its post of capital city of Brazil for the newly constructed Brasília. At 4 km in length, the elevated avenue connected the main entrance road of Rio de Janeiro, called Brazil Avenue, directly to the city center, crossing over the port area that has been since then entirely isolated and fragmented from the city.

All in all, the 3 constituent neighborhoods of the port area, namely *Santo Cristo*, *Gamboa* and *Saúde*, were excluded from the city's development. As Cardoso et al. (1987) comments, whilst the city was being modernized through its high-rises, the port neighborhoods had their forms, activities and traditions crystalized. This neglecting situation is reflected in the demographic numbers of these neighborhoods. For instance, this area that is considered the Administrative Region One [RA 1] by the city management has the 24th Human Development Index between the other 32 RA's of Rio de Janeiro and has witnessed the continuous decrease of its population. Whilst the city's population has increased, from 1991 to 2000, these maritime neighborhoods have decreased in population, and the ones who stay are mostly living in deprived conditions. In 2000, from the 40,486 people who were living there, 43%, or 17,409 people was living in slums (Prefeitura da Cidade do Rio de Janeiro, 2010).

3. Mega-events and Rio de Janeiro's urban transformations

Following the widespread belief that hosting mega-events represents a way to expedite the country's economic and social development, Brazil, in particular the city of Rio de Janeiro, has channeled efforts in attracting such events since 1990s. Although Brazil has already hosted the World Football Cup in 1950, the aim of bidding for a mega-event as a 'mechanism for transforming the space of the city while at the same time acting as a platform to project

those transformations to the international community' [Gaffney, p.24] date back to the unsuccessful bids of Rio de Janeiro for hosting the Olympics in 2004 and 2012. Within this mindset, Brazil, more specifically Rio de Janeiro has hosted the Pan-American Games in 2007, which despite costing 10 times more than its first projection, was considered a 'successful' event by the media and international sports organizations. Consequently, counting on the 2007's experience and with a comprehensive bidding document highlighting the importance of such events in Latin America and the social, environmental and economic impact of such mega-events, Brazil has won, firstly the FIFA World Cup 2014 and Confederation's Football Cup 2013, and secondly the Olympic Games of 2016. The Olympic Games 2016 will be exclusively hosted by Rio de Janeiro.

However, it is important to highlight the 'ongoing critical analyses regarding the ability and likelihood of sport mega-events to deliver sustainable, tangible, and egalitarian development in the Global South, as well as the propensity for sport-focused development initiatives to align with modernization and/or neo-liberal approaches and philosophy that may fall short of challenging or redressing structural inequalities' (Darnell, 2010). Agreeing with that, Lenskyj (2008) underscores that financial loss, temporary cessation of democratic process following the big international organizations rules and regulations [FIFA, IOC, etc.], production of militarized and exclusionary spaces, home evictions, among other dramatic city changes are the common ground of most of the mega-event's city hosts. Diving more deeply in the specific case of Rio de Janeiro, Gaffney (2010) argues that 'the transformations that mega-events wreak are permanent, impose temporary forms of governance that elide democratic institutions, install new and enduring surveillance and disciplinary mechanisms, while both creating and exacerbating unequal geographies of power within the city at large' .

Reflecting the above-mentioned challenges and blurry facts related with hosting such mega-events, Rio de Janeiro is facing huge urban transformations that are mostly guided by the extra-governmental entities which drives the transformation of the city from a place for living and working, to a place to be consumed (Gaffney, 2010). From the 55 billions of Brazilian Reals that Rio de Janeiro will receive as an investment for the World Cup and Olympics, 33,1 billion of Brazilian Reals will be for infrastructure (Tabak, 2011). However, as highlighted by Gaffney (2010), from the transportation system to the Olympic Villas that will be constructed, the transference of public money to serve the private interest is clear. This affirmation can be clearly seen in the report made by the National Coalition of Local Committees for a People's World Cup and Olympics (2012). This document highlights that among the huge investments in infrastructure and transport, which is extremely necessary to the current challenges of mobility within the city, are mainly focusing in connect touristic and sports facilities. Furthermore, this report as well as other authors such as Gaffney (2010); Mello and Gaffney (2010); and Darnell (2010) have mentioned the bias choices regarding the areas where the *Bus Rapid Transit* [BRT] and *Light Rail Transit* [LRT] transportations have been chosen to pass. For instance, the LRT that will cross the *Barra da Tijuca* neighborhood area are requiring the removal of houses of low income families that are just next to middle and high class areas, literally freeing the area from the 'undesirable' slums and consequently increasing the value of that land.

The investments in Rio de Janeiro for the mega-events include the above-mentioned transport infrastructure comprising the modernization and expansion of the subway, construction of BRT and LRT and the renovation of the international airport. Other than that, sports facilities will be constructed and renovated. For instance, the *Maracanã* Stadium, which has recently been renovated for the Pan-American games at the cost of 430 million Brazilian Reals, has just finished another renovation exercise costing 1.049 billion Brazilian Reals. Furthermore, the Olympics and World cup will have a huge impact in developing urban regeneration projects. Regarding these projects, one of the most important and ambitious is the *Porto Maravilha* project. After a long time being forgotten by the government, the historical port area of Rio de Janeiro is the object of a huge urban regeneration process.

3.1 *Porto Maravilha Project*

After more than 50 years of abandonment and following the global trends of revitalizations of old industrial and port zones in a reconfiguration of land use, the previously mentioned historical maritime neighborhoods of Rio de Janeiro have regained government attention. Hidden beneath the *Perimetral* Highway and facing problems such as lack of renewed sewage and light systems, crime and violence, the governmental eye came back to the area a few years before the announcement of the Olympics in 2009. However, it was in October 2009, with the advent of the mega-events that the federal, state and municipal governments have made a joint effort to redevelop the area, using the mega-events and developing specific rules and regulations as a way of attracting the private initiative to invest in the area. Then, after a comprehensive study about other port area revitalization experiences, in particular Puerto Madero Port in Buenos Aires, Argentina; the Barcelona experience during the Olympics of 1992; the Rotterdam port revitalization and even another Brazilian experience in the capital of Pará state, the docks revitalization in Belém, the *Porto Maravilha* project has been launched (CEDURP, 2013b).

Thus, after experiencing the different stages of being from the heart of the history to a simple passageway, the port area has received the biggest Public Private Partnership [PPP] in Brazil, with an investment of 7.3 billion Brazilian Reals. After winning a bidding process, the *Porto Novo* Consortium, which is the result of a partnership between three of the biggest construction companies in Brazil, namely Noberto Odebrecht, OAS e *Carioca Engenharia*, has assumed the planning, execution and maintenance of the *Porto Maravilha* project. This project covers 5 million square meters of the city and includes the three old maritime neighborhoods with their more than 20,000 people. This area has been chosen for this major urban intervention for different reasons, in particular due to its huge tourism potential and the fact that 75% of this area belongs to the state. Based on this later aspect, the decision makers involved expected that this land ownership peculiarity would ease the necessary expropriations and consequently decrease the public resistance (Mello and Gaffney, 2010).

One of the project's premises is to undertake the urban intervention without using public money, relying principally on private investment. In order to do that, the CEDUR – Rio de Janeiro Port Region Urban Development Company, which is the mixed economy company formed by a municipal complementary law to manage the *Porto Maravilha* Project, has created the CEPACs. As highlighted at the *Porto Maravilha's* official website, the acronym CEPAC describes the name, in Portuguese, of Certificates of Additional Construction Potential, and they are the 'titles used to finance Urban Operations in Consortium, which recover degraded areas in the cities' (CEDURP, 2013b). More specifically, these CEPACs are titles that could be financially negotiated allowing the investor to buy the rights of building edifices with more floors than what was originally allowed in the area. As Mello and Gaffney (2010) criticizes, the CEPACs acquisition represents the buying of the right of disrespecting the urban laws previously established for the region. Despite such criticisms, the CEPACs were sold in 2011 in a single package for 3.5 billion Brazilian Reals. The money has been transferred to the *Porto Maravilha* project and as a consequence nowadays some parts of the port area will have buildings with 40 floors and above.

The main urban transformations aimed through the *Porto Maravilha* project concentrate on changing the current status and feature of the neighborhood. The objective is to develop a new cultural and entertainment center, attracting both private investment related with that as well as various population profile, increasing the number of residents from the current 22,000 to 100,000 within 15 years. Under the administrative concession of *Porto Novo* Consortium, one museum has already been constructed – MAR [Art Museum of Rio] – some areas such as *Morro da Conceição* has had its electrical cables renovated, part of the *Perimetral* Highway has been demolished and one tunnel has almost been completed as a substitute for the demolished highway. Other than that, this urban intervention intends to build another

museum designed by the Spanish 'star' architect Santiago Calatrava, to construct a Light Rail Transit [LRT], renovate the whole area's urban infrastructure from sewage system to water and public light and to implement new urban standards in approximately 70% of the streets. Moreover, within the 35 years concession, this private consortium is responsible for both the maintenance of the area's infrastructure and the service provision, which ranges from trash collection to traffic control and urban sanitation (CEDURP, 2013a).

Despite recognizing the importance of an urban regeneration project in the area given that the current local population deserves access to public services and infrastructure, many urban specialists [(Gaffney, 2010); (Mello and Gaffney, 2010); (Darnell, 2010); (Passos and Sánchez, 2011, Passos and Sánchez, 2012); (National Coalition of Local Committees for a People's World Cup and Olympics, 2012)] criticize the way it has been done until now. The common ground of understanding among these specialists is that the *Porto Maravilha* project, utilizing the mega-event's urban boosting discourse, represents the privatization of urban planning and transformation of the city from a place to live to a place to be consumed. As emphasized by Gaffney (2010), 'as with most mega-events, development is highly uneven and tends to benefit private developers and construction interests while creating spaces for wealthy residents and the international tourist class'. What is more, in its yearly report, the National Coalition of Local Committees for a People's World Cup and Olympics (2012), has highlighted that other than removing some people from the place where they have been living for years in order to open space for the 'development', the non-participative urban interventions that are taking place in the port area will indirectly force the majority of low income population to look for another place to live due to the high cost of living and the neighborhood's drastic profile modification [gentrification]. This highlighted fact can easily be confirmed when checking the vertiginous increase of the land price within the port area, which since the beginning of the project in 2010, has already increased 300%. (Passos and Sánchez, 2011)

4. For whom are the urban transformations?

'Rio de Janeiro has fully engaged the process of making itself into an Olympic City where the workers will stream down from the favelas to built sportive constellations that are intended for use by the international tourist class and the upper state of Brazilian society'. (Gaffney, 2010)

The provocative question of this section reflects the current challenging scenario not only of the urban interventions, related with the mega-events within the port area, but also in the whole country. Particularly in the case of *Porto Maravilha* urban revitalization process, as highlighted before, it targets a specific type of tourist and serves private companies and a particular group that sees the area as a place to be consumed. Thus, one may ask: after such a long history and with a large population living there for generations, are the port area's people really being represented in this urban 'revitalization'? More broadly, starting from 13th of June 2013, while the Confederation Football Cup was taking place as a training experience for the World Cup, the whole country came out onto the streets in demonstrations against a huge list of issues related, among others, with a crises of the current democratic representations in Brazil. From the outset, criticism against the way the *Porto Maravilha* project have been planned is just one among other examples of why Brazil's population went to the streets. Far from discussing the reasons and outcomes of these ongoing demonstrations, it is important to highlight that they do represent the Brazilians dissatisfaction regarding the way things have been planned and executed. The 'crises of representativeness', as it has been called during the manifestations, are expressed by the 200 million Brazilians who pay the high taxes and vote, and then expect to receive the basic public services that addresses the population's general issues and represent the country's will.

Saying that and adding Gaffney (2010)'s quotation that opened this section, the 'crises of representativeness' within the port area urban intervention become explicit. With almost half of its population living in slums and with a strong sense of solidarity in order to handle the everyday life, it is easily assumed that the 50 floor buildings and other 'modern' artifacts are not necessarily being constructed to address the basic needs of this population. For instance, analyzing the official documents and through interviews with *CEDURP*, it has been clear that although the *Porto Maravilha* project has some initiatives related with 'capacity building' within the area, most of the small commerce of the region will not survive the urban transformations. Moreover, as much as the official discourse says the opposite – justified under the existence of the 'Cultural Port' and 'Citizen Port' initiatives within *Porto Maravilha* project – the grassroots character of the region will not be fully reflected in a museum or other initiative addressed to an international tourist. As mentioned by Mello and Gaffney (2010), the current situation of the mega-events in Rio de Janeiro, as well as historically in their previous editions in other Global South countries, fosters the already existent social inequalities. As highlighted by Preuss (2004), 'in developing countries, the economic impact created by the Games is smaller than in industrialized countries [...] if the games neither support an urgently needed city development nor the economic impact to be expected then only a positive image and promotion effect may occur' [p.285].

More broadly, recent debates in urban theory, which not necessarily address the mega-event's social legacy but defend the importance of learning from cities' experiences everywhere, have also advanced in the discussion of the question: 'for whom are the urban transformations?' The postcolonial urban theory has put a question mark on the well-accepted assumption that for a city to be modern, it should follow certain patterns well accepted in the mainstream urban theory. Jennifer Robinson (2006, Robinson, 2011), one of the key scholars of this area, defends a postcolonial urban theory committed to challenging the 'colonial and neo-imperial power relations that remain deeply embedded in the assumptions and practices of contemporary urban theory'. For her,

'these are certainly evident in the practice of dividing, categorizing and assuming hierarchical relations amongst cities, but they are also visible in accounts of urban modernity – the creativity, dynamism and innovativeness of cities – which have assumed a privileged relationship with certain wealthy, Western cities. By contrast, a post-colonial urban studies would draw its inspiration from all cities, and all cities would be understood as autonomous and creative (Robinson, 2006)."

This means, to take the provocative question on the title of this session, that when the mega-events urban transformations are driven to develop the city in a way that it can position itself among the other 'western' 'modern' 'global' cities, the grassroots experiences are usually suppressed in order to give space for the city progress and development. If the above-mentioned issue is exactly 'for whom are the urban interventions?', the collaboration of the postcolonial urban discussions goes on the revision of 'why the city should follow the same 'First world' features in order to be 'modern'. Using this different approach toward the urban regeneration process such as the one that is taking place in Rio de Janeiro's port area, the question becomes how to learn from the things that have already taken place within the urban terrain?

Addressing this question, McFarlane (2011), who is another postcolonial urban study's advocate, focuses on these everyday practices of cities everywhere and raises the question, among the discussion of urban learning, of how these grassroots experiences take place and how to learn from and with them? For him, and also for this paper, 'the urban learning is not exhausted by the specificity of particular encounters with urban form or process, but is instead embedded in the current of people's lifeworlds and is shaped **relationally**' (McFarlane, 2011). Saying that, and looking more narrowly to the Rio de Janeiro's port area revitalization, one would agree that is possible to draw a more 'situated' urban practice if paying attention to the ways that the local population already copes and addresses their own

issues. For instance: How this people, who have been there for generations, dealt with the structural and symbolic separation between the port area and the city?

5. Bridging the gap: grassroots creative experiences within the port area

The aforesaid sequence of occurrences and urban interventions within Rio de Janeiro port area have briefly explained the abandonment and fragmented situation that the area and its population were facing until 2010, when the mega-events have triggered a series of transformations. However, as discussed in the previous section, the premises of such mega-events' driven urban revitalization do not necessarily address the priority issues of the local area and its population. Moreover, another point discussed above incorporates the importance of learning from the urban solutions that are already taking place within people lifeworlds.

Therefore, using McFarlane's idea of urban learning as something 'embedded in the current of people lifeworlds and shaped relationally' (McFarlane, 2011) and focusing on potential examples taking place within Rio de Janeiro's port area, two initiatives will be briefly presented here. Among the various issues, this paper has chosen the abandonment situation and the lack of connections and dialogue between the city and its port region as the area to looking for these grassroots creative experiences that could trigger a further discussion about more situated ways of addressing these population latent urban issues.

Nevertheless, it is important to highlight that the option of calling these grassroots experiences as 'creative' draws on Landry (2008) discussion of the need for a paradigm change within the urban realm. For Landry, the urban transformations are nowadays 'moving from an 'urban engineering' approach to urban development, to a 'creative city-making' approach' (Landry, 2008). Saying that, and also stressing the importance of learning within this process, he defends that creativity is 'applied imagination using qualities such as intelligence, inventiveness and learning along the way' (Landry, 2008). Another author that has also addressed the role of grassroots creative experiences as a way of urban planners to learn and discuss potential urban interventions is Sandercock (2003). She argues that:

'There are different kinds of appropriate knowledge in planning. Local communities have experiential, grounded, contextual, intuitive knowledges, manifested through speech, songs, stories, and various visual forms. Planners have to learn to access these *other ways of knowing*' (Sandercock, 2003) [p.34].

Hence, one of the experiences worthy to comment here is the Samba group *Escravos da Mauá*. For 21 years, this group composed by government employees, who work in the public buildings of the port area, some port dwellers and friends have fostered the revitalization of Rio de Janeiro's port area through art, culture and fun. With monthly open rehearsals, this group brings people from the 'city' and from the local area to sing and dance samba inside the port area. As something done by people who are truly committed to the region, the *Escravos da Mauá*, whose name is a tribute to the slaves and other black people who were the reason for the are been called 'The Little Africa', has not only 'sang' the local area, but published historical CD-ROMs telling the story of these maritime neighborhoods. Using lyrics that celebrate the pioneers of samba, who were originally from that location, the samba group that plays every carnival has received various prizes for its value and appreciation effort within the port area. One of them, for example, is from the Architects Institute of Brazil in Rio de Janeiro that honored the group with the 'Urbanity prize' of 2000, which is given to the initiatives that foster the preservation and revitalization of the historical and cultural heritage, and occupies the public space in a creative way. As it is stated in *Escravos da Mauá's* website,

'The samba group *Escravos da Mauá* and the samba gathering of Mauá represent our strong commitment to occupy the public spaces of Rio de Janeiro with happiness, samba, love and peace' (*Escravos da Mauá*, 2013, author's translation)

Another grassroots creative experience that has taken place for more than 10 years in *Morro da Conceição*, which is one of the historical hills of the port area, is the Mauá Project. It happens on 8th of December of every year, at the same day of celebration dedicated to worship the catholic saint *Nossa Senhora da Conceição* within the region. On that day, the artists, who live and work at their houses at *Morro da Conceição*, open their doors to the visitors displaying their arts and the particular features and lifestyles of one of the first inhabited hills of Rio de Janeiro. This initiative, which has encouraged dialogue and attracted people from in and outside the port area, is currently passing through an interesting process that reinforces McFarlane (2011)'s understanding of urban learning as something 'embedded in the current of people's lifeworlds and shaped **relationally**' (McFarlane, 2011). Recently, a private institution, which is associated with the *Porto Maravilha* project, has approached the core group of artists of Mauá Project looking for the possibility of institutionalizing the event, amplifying its impact, number of visitors, etc. However, this effort generated some clashes between the artists and the relational sense that used to connect the group throughout the years has slightly changed to a more capitalist relation. Some of the artists, for example, have requested salaries from this private institution in order to do something that once had been started under their own mutual help and interest.

The recent urban revitalization process undertaken by the *Porto Maravilha* project has somehow impacted both of these cases. In the Mauá project, the impact was expressed through the attempt to institutionalize something that was strongly connected with the relation of trust among the core artists and also between them and *Morro da Conceição's* neighborhood. After some clashes, some of the artists have stuck together and decided to do the event again in the way they have always believed. The *Escravos da Mauá's* case, on the other hand, has felt the impact and answer it in a different way. After witnessing the discussions about urban revitalization, the *Escravos da Mauá* group has felt the importance of shedding light on the historical actors and cultural groups that throughout the long period of port area abandonment have kept the area alive and conscious of its importance within Rio de Janeiro scenario. This can be seen in the lyrics and performance of *Escravos da Mauá* during the last carnival [2013]. For the first time after 20 years of performances, they have changed their usual route. They have done that in order to show the crowd most of the historical treasures and main cultural and artistic groups within the port area. These other groups in turn have joined the performance and done their share of the show, which can be considered as the art materialization of the relational aspect of the urban learning process.

However, drawing on Sandercock (2003) one should agree that the *Porto Maravilha* urban intervention is just one point of view of how the port area should be regenerated. These grassroots creative experiences have been shaping the city and particularly the port area in their own way. They are shaping their own history intersected 'with struggles over space and place-claiming, with planning policies and resistances to them, with traditions of indigenous planning, and with questions of belonging and identity and acceptance of difference'(Sandercock, 2003). They represents, as mentioned by McFarlane (2011), the 'inseparable mixture of habits of craft and literature with popular images and slogans *that* is obviously a means for making a living, but it is constituted by forms of knowing that are at once spiritual, popular, traditional, fantastical, and modern.'

6. Conclusion

After presenting the history, urban transformations and potential of learning from grassroots creative experiences within Rio de Janeiro's port area, this paper wishes to collaborate with the major discussion about the challenges and opportunities of city-making in the Global South. Bringing back the quotation presented in the introduction, which says that the '*Porto*

Maravilha is returning a historical treasure to Rio, and at the same time integrating areas with great housing, cultural and economic potential, which will be transformed into an example of modernity' (CEDURP, 2013b), the question that urges to be addressed is: For whom Rio de Janeiro's port area will be an 'example of modernity'? Based in which principles?

Looking forward to answering that, this paper first commitment was to have a better 'understanding of the exclusionary effects of planning's past practices' in Rio de Janeiro, and particularly in the port area in order to understand how the future plans could address the local citizens ways of being modern. (Sandercock, 2003) In doing so, the historical value of the port area, its urban segregation and consequent need for an urban intervention that takes into account the connection of this area with the city were highlighted. However, this later emphasized need has been recently driven by the mega-events urban transformations in Rio de Janeiro. For instance, utilizing the mega-event's urban boosting discourse, the Rio de Janeiro's port area urban regeneration – the *Porto Maravilha* project, represents the privatization of urban planning and transformation of the city from a place to live to a place to be consumed.

Nevertheless, this paper has also showed the exclusionary side effects that mega-events urban interventions have brought to Rio de Janeiro, a case that does not differ from other developing cities. As mentioned before, the current impact caused by mega-events in Rio de Janeiro, as well as historically in other Global South cities, stimulates the already existing social inequalities in these areas. As highlighted by Preuss (2004), 'in developing countries, the economic impact created by the Games is smaller than in industrialized countries [...] if the games neither support an urgently needed city development nor the economic impact to be expected then only a positive image and promotion effect may occur' [p.285]. In line with this argument, both issues – the economical deprivation of former citizens of the areas of Rio de Janeiro that are under huge urban transformation; and its consequent gentrification process – were discussed by the National Coalition of Local Committees for a People's World Cup and Olympics (2012).

Saying that and following Sandercock (2003)'s argument about an urban planning dedicated to diversity, one should agree that in order to urban interventions to be considered effectively inclusive, the planners would have to take into consideration both the exclusionary effects of the urban transformations in Rio de Janeiro's port area throughout the years and the '*other ways of knowing*' that take place in the everyday life of people who live and use the area. Therefore, the option of looking at the creative grassroots experiences as a creative way of city making represents the attempt of learning from what is already taking place on the ground. Their attempt to bridge the gap between the city and the port area calls the urban specialists attention to the everyday experiences that usually take place within the urban terrain of cities everywhere. This is particularly common in Global South cities due to their recent city booming and associated social urban issues. These locations have witnessed many forms of improvisation of their dwellers learning to 'negotiate cities through incremental experience'. As mentioned by McFarlane (2011),

'Improvisation is, however, just one way in which people learn to negotiate cities through incremental experience. For example, given the diverse nature of many large cities, urbanities often need to learn to negotiate a wide range of groups, identities and places'. [p.43]

All in all, the analyses of the grassroots creative experiences that are already taking place in a city requires open eyes committed to seeing things differently and capable of understanding the importance of creativity as something constructed relationally within the urban terrain. The briefly presentation of the two cases intends to highlight the importance of learning from these experiences, as they have already invented their own ways of addressing their social issues. On the other hand, they do not necessarily reflect the expectations of the private companies, international tourists or other types of interest that

look at the city as a place to be consumed. Other than that, these grassroots creative experiences are calling the urban planners to learn from 'another ways of knowing' (Sandercock, 2003) that happen in cities everywhere (McFarlane, 2011, Robinson, 2006, Robinson, 2011) and showcase the role of creativity in the city making (Landry, 2008).

References

- CARDOSO, E. D., VAZ, L. F., ALBERNAZ, M. P., AIZEN, M. & PECHMAN, R. M. 1987. *Saúde, Gamboa, Santo Cristo*, Rio de Janeiro, João Fortes Engenharia.
- CEDURP 2013a. Operação Urbana Consorciada da região do porto do Rio de Janeiro: Prospecto de Registro.
- CEDURP. 2013b. <http://www.portomaravilha.com.br> [Online]. [Accessed 13/06 2013].
- DARNELL, S. C. Mega Sport for All? Assessing the Development Promises of Rio 2016. Rethinking Matters Olympic, 10th International Symposium for Olympic Research, London, Ontario, 2010. 498-507.
- ESCRAVOS DA MAUÁ. 2013. <http://www.escravosdamaua.com.br> [Online]. [Accessed 13/06 2013].
- GAFFNEY, C. 2010. Mega-events and socio-spatial dynamics in Rio de Janeiro, 1919-2016. *Journal of Latin American Geography*, 9, 7-29.
- LANDRY, C. 2008. *The Creative City: A Toolkit for Urban Innovators*, London, Earthscan.
- LENSKYJ, H. 2008. *Olympic industry resistance: Challenging Olympic power and propaganda*, SUNY Press.
- MCFARLANE, C. 2011. *Learning the City: Knowledge and Translocal Assemblage*, Wiley-Blackwell.
- MELLO, E. S. O. & GAFFNEY, C. 2010. Mega-eventos esportivos no Brasil: uma perspectiva sobre futuras transformações e conflitos urbanos.
- NATIONAL COALITION OF LOCAL COMMITTEES FOR A PEOPLE'S WORLD CUP AND OLYMPICS 2012. Mega-Events and Human Rights Violations in Brazil. Executive summary. Rio de Janeiro.
- PASSOS, F. D. & SÁNCHEZ, F. 2011. Por um porto (in) corporado: políticas urbanas e territórios culturais na zona portuária do Rio de Janeiro. *Revista Geográfica de América Central*, 2.
- PASSOS, F. D. & SÁNCHEZ, F. Entre cenários da renovação urbana e expressões culturais nos espaços públicos do Porto do Rio de Janeiro. 2o Seminario de Paisajes Culturales Udelar/UPC. Conpadre n.11/2012, 2012 Universidad de la Republica/ Universidad Politecnica de Cataluña. Montevideo, Uruguay.
- PREFEITURA DA CIDADE DO RIO DE JANEIRO 2010. Bairros cariocas - Armazém de dados. <http://portalgeo.rio.rj.gov.br/bairroscariocas/>.
- PREUSS, H. 2004. *The economics of staging the Olympics: a comparison of the Games 1972-2008*, Edward Elgar Publishing.
- ROBINSON, J. 2006. *Ordinary Cities: between modernity and development*, USA and Canada, Routledge.
- ROBINSON, J. 2011. Cities in a World of Cities: The Comparative Gesture. *International Journal of Urban and Regional Research*, 35, 1-23.
- SANDERCOCK, L. 2003. *Cosmopolis II: Mongrel Cities of the 21st Century*, London & New York, Continuum.
- SIGAUD, M. F. 2000. *Morro da Conceição da memória o futuro*, Sextante Artes.
- SMU & IPP PREFEITURA DA CIDADE DO RIO DE JANEIRO 2003. Recuperação e revitalização da Região Portuária. Rio de Janeiro.
- TABAK, B. 2011. Rio deve receber investimento de R\$ 55 bi para Copa e Olimpíada, diz PwC. *G1 RJ*, 12/07.

Simulating the Impact of Urban Morphology on Energy Demand - A Case Study of Yuehai, China

Chuan SHANG, School of Architecture, Southeast University, China

Ko-Yang LIN, Welsh School of Architecture, Cardiff University, UK.

Guoying HOU, Welsh School of Architecture, Cardiff University, UK.

1. Shortened Abstract

The aim of this study is to attempt to explore the impact of urban morphology on the energy demand of buildings, using simulation tools developed by the Welsh School of Architecture, Cardiff University, called VirVil Plugin and HTB2. The process of simulation is applied to one proposed project with four different scenarios, while the study considers one parameter for each scenario as follows: 1) building forms; 2) average building height; 3) orientation of building; and 4) community pattern. The project is chosen from an urban design scheme of Yuehai Eco-City in Yinchuan, China, designed by Architects& Engineers Ltd of Southeast University, China. The simulation results indicate a quantitative correlation between urban morphology features and the energy performance of buildings at urban scale. Furthermore, the results provide several perspectives for developing constructors to reduce the energy demand at the master planning stage. Moreover, the study also suggests that the method could spread globally.

2. Introduction

It is now widely accepted that enhancing energy efficiency of buildings is one of the primary approaches to achieve sustainable development. Most previous studies discussed this issue primarily from the perspective of individual buildings. A large number of reliable architectural design guides have been summarized, such as raising the thermal performance of fabric, improving energy efficiency of device systems, designing envelopes giving priority to climate and site, and even net zero energy buildings have been constructed. However, most of these researches and observations were conducted for a standard non-urban environment (Futcher et al., 2013). In this regard, it is important to recognize that if a cluster of buildings with good energy performance is assembled into a block in a non-optimal arrangement, the interactive influence generated by the surrounding buildings may increase the energy consumption of the buildings and the whole block. In contrast, greater reduction in energy consumption could be achieved in advance by considering urban form and micro climate at a master planning stage.

Only a few (but a growing number of) researches concerning building energy performance at urban scale have been addressed from the viewpoint of urban climatology, particularly with regard to the impact of urban morphology on the energy demand of buildings. Wong et al. (2011) simulated a three-storey office building located in a tropical climate city, Singapore, over one day. They employed 32 scenarios to represent different surrounding urban settings, accounting for three parameters: greenery, building height and building density. The

simulation results showed that increasing the height and density of the surroundings (greenery and buildings) lowers the temperature of the external microclimate and reduces the cooling load of the building by around 5%. Strømmandersen and Sattrup (2011) found that the total energy consumption of low-energy buildings in the north-European setting may be affected by the geometry of urban canyons in the range of up to a 30% increase for offices and a 19% increase for housing, demonstrating that the geometry of urban canyons is a key factor in energy use of buildings. Adolphe (2001) developed a simplified spatial model based on a set of original morphological indicators of the environmental performance of urban patterns, to define urban morphology in terms of various parameters, such as density, rugosity, sinuosity, contiguity and solar admittance, anticipating the application of this approach to simplify the analysis of outdoor microclimate tendencies and the energy balance of urban patterns. Cheng et al. (2006) examined the relationships between built forms, density and solar potential based on a sky condition of low geographic latitude, by simulating 18 generic models with reference to three criteria: sky view factor at ground level, daylight availability on building facade and PV potential on building envelope, revealing that randomness in both horizontal and vertical layout and low site coverage with a higher building can provide helpful insights for planning solar cities. Fitcher et al. (2013) examined the suitability of urban settings for buildings with a change-of-use function (from office to residential) in a typical city street and with the current and projected climate of London. By calculating the heating and cooling demands of buildings, they found that urban setting (and in particular street geometry) plays a significant role in regulating the solar access, and should be considered as a building and urban energy management parameter in the early design stages. Jones et al. (2009) simulated buildings in a proposed new city with hot and dry climates and considered four design parameters, including orientation, over-shading, construction type and internal heat gains. Salat (2009) observed a district of 96,000 existing buildings in Paris and compared some environmental metrics of urban forms. Their study revealed the impact of urban morphology and building typology on energy efficiency in the different zones of Paris. Finally, they emphasized the necessity of optimizing the parameters of urban form at the stage of urban planning and management.

The previous researches presented above demonstrated that urban form can play an important role in regulating energy performance of buildings at urban scale. Thus, considering the parameters of urban form (e.g. building shape, density, green ratio, orientation, street geometry, sky view factor) at the early design stage should help to minimize the energy demand of buildings. Therefore, there is considerable scope to explore the energy performance of blocks in environments with complicated climatic conditions and to establish the impacts of the parameters relating to urban form.

3. Methodology

Energy performance calculation at urban scale can be subdivided into two categories: top-down and bottom-up approaches. The top-down method focuses on long-term statistics and considers pertinent parameters and on-going changes in order to estimate the effect on energy consumption of buildings. The parameters commonly adopted are gross domestic

product (GDP), employment rates, price indices, climatic conditions, housing construction and demolition rates, appliance ownership, and units (Swan and Ugursal 2009). On the other hand, the bottom-up method contains statistical and engineering aspects (ibid.). The statistical aspect uses similar historical data as the top-down method, but considers more information relating to the end-user. In contrast, the engineering aspect, which is strongly supported by technology and calculated in dynamic systems, accounts for the energy consumption with a massive amount of detailed information, such as diary and small power application. The advantage of the method is to allow researchers not only to simulate and analyze the energy performance of existing buildings, but also to predict the changes that will result from design strategies or technical improvements.

3.1 Framework of methods

The research method employed here is based on the concept of the engineering aspect in the bottom-up approach. In the first stage, detailed information relating to local weather, geometrical background, diary of occupancies, materials and layouts of buildings, and outdoor environmental information is considered in order to create a prototype. This prototype is then used as a basis in simulations for comparing with the results of experimental models. Within the simulations, four different experimental models are constructed, with each model considering a different parameter. The parameters considered are: form, average height, orientation and community pattern. Finally, through dedicated discussion and analysis of the simulation results, the principles required to save energy demand of buildings for the Yuehai Eco-City master planning are established (Figure 1).

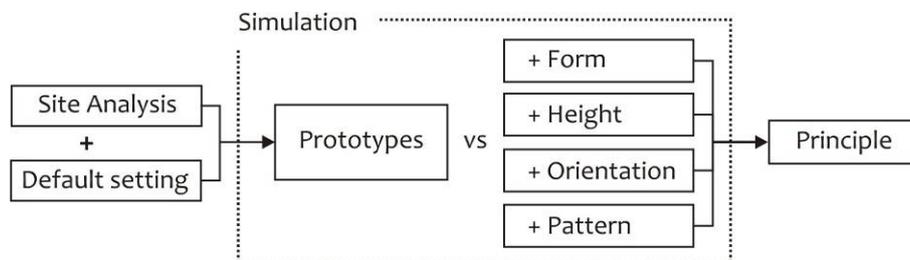


Figure 1 The framework of methods.

3.2 Technical tools

The proposed calculation engine was developed to simulate buildings at urban scale, and is integrated by SketchUp (@Last Software and Google), HTB2 v2.10 (WSA 2008), and Virvil Plugins (WSA, 2012). SketchUp is among the most popular software for 3D building used by architects and urban designers, while HTB2 is recognized as one of the most reliable calculation engines for energy use and internal temperature prediction (Alexander, 2003). Virvil Plugins are updated tools to connect both of them, helping to extend the limited scope of HTB2 to consider the relationship of buildings to the nearby surrounding areas (Lin, 2013). These tools were adopted in this research because of their high reliability, applicability and user-friendly interface.

4. Subject

This case is chosen from an urban design scheme of Yuehai Eco-City in Yinchuan, China, which is designed by Architects & Engineers Ltd. of Southeast University, China. Yinchuan is located in the northwest region of China, between 37°29'N~38°53'N and 105°49'E~106°53'E. The average elevation of Yinchuan is 1,010 to 1,150 metres. Yinchuan has a continental desert type of weather, with an annual average temperature of 9.4°C. Also, it is characterized by long hours of daily sunshine, intensive solar radiation, observable differences of diurnal temperature and four seasons.

The planned area of Yuehai Eco-City is 317.4 hectares, located at the north of Yinchuan city centre close to the Yuehai Wetland Park. In order to make a low carbon and ecological living environment and to meet the local government's requirements of energy performance for buildings, this planning aims to create a pleasant urban environment and to reduce the overall energy consumption of the eco-city.

The simulation prototype of this study is based on block numbers 6, 7 and 8 of the Yuehai Eco-City Planning Scheme. Building types are categorized as domestic, commercial, school and office (Figure 2). Building form has been simplified in order to reduce the simulation time, but without compromising the accuracy. The default settings for the construction, layout and materials of buildings are based on high standard building regulations. The parameter settings for different types of window-wall ratio and indoor conditions are given in Appendices A, B and C. The four simulated scenarios considered in this study are created by adjusting the building form, the average building height, the orientation of buildings, and the community pattern. The context of the proportion of building types, total floor area, and building construction are not changed, and are again set to satisfy the requirements of local planning regulations.

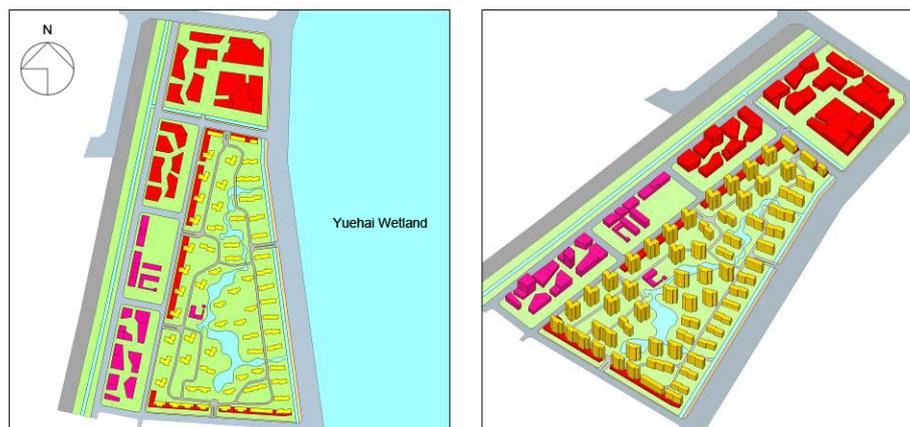


Figure 2 Images of the prototype used in this research: domestic (yellow), commercial (red), school and office (pink).

5. Discussion and Analysis

The simulation results of one prototype have been compared with four different experimental models based on consideration of the following four parameters: building form, average building height, orientation of buildings and community pattern (Figure 3). In the following sections, each of these parameters is analyzed and discussed.

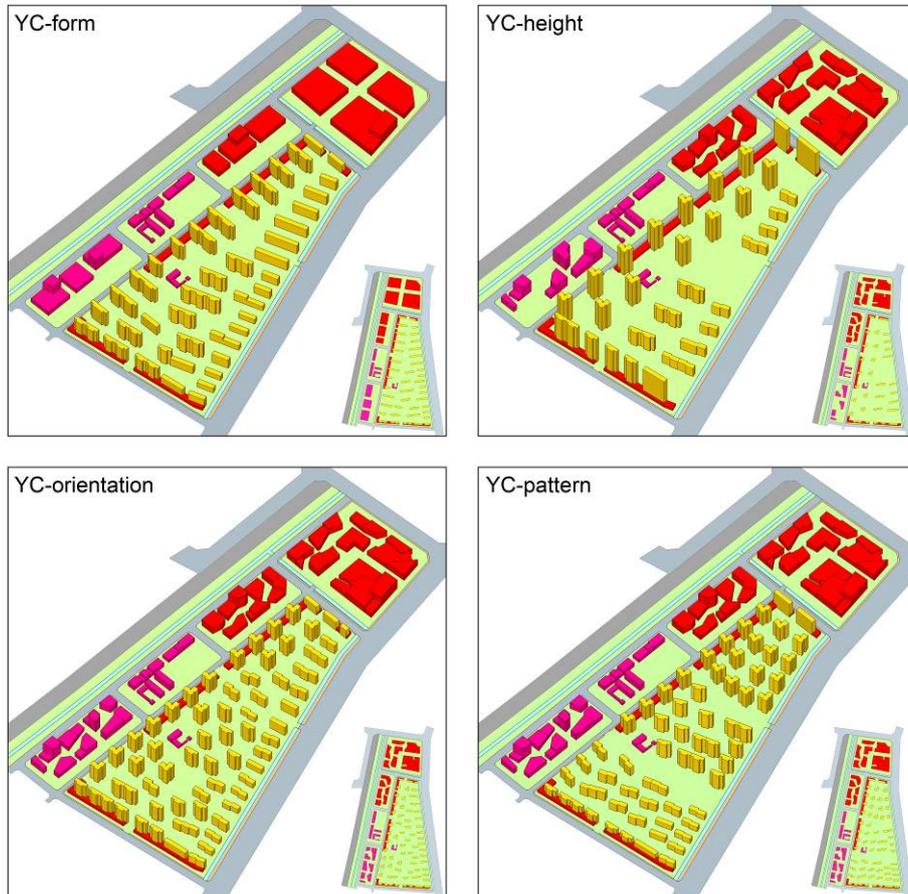


Figure 3 The four experimental models based on consideration of the following parameters: form (upper left) average building height (upper right), orientation (lower left) and community pattern (lower right).

5.1 Building form

Building form, which refers to the geometrical characteristics of the buildings, affects the solar gain and energy demand of buildings in the urban environment by changing the wall-to-volume ratio and the corresponding effect of over-shading (Lin, 2013). In northern China, the two most popular forms of domestic buildings are point block and slab block. For commercial buildings, the most popular types are commercial blocks and shopping malls. The prototype, YC, adopts the point block form for domestic buildings and commercial blocks for commercial ones. On the other hand, the experimental model, YC-form, adopts slab block and shopping mall types.

The simulation results show that integration of the slab block form for domestic buildings and the shopping mall form for commercial buildings decreases the energy demand (Figure 4).

The heating demand of slab block domestic buildings is generally 2.3 kWh/m²/yr lower than that for domestic buildings with the point block form, whereas the cooling demand is nearly the same in each case. For commercial buildings, the shopping mall form consumes less energy both for heating and cooling. Although the dependence of energy demand on building form may be much less than the dependence of energy demand on other mechanical strategies, optimization of building form is nevertheless a passive design strategy that can improve the overall energy performance of buildings.

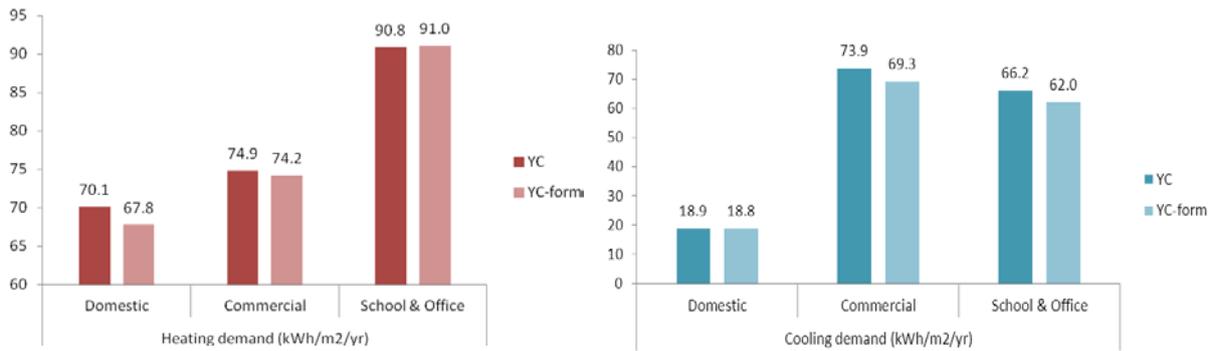


Figure 4 Comparison of energy demands between the prototype and the experimental models with different building forms.

5.2 Average building height

The impact of building height on the energy demand of buildings mainly arises from their role as practical obstacles in the urban environment. In particular, the building height not only shapes the skyline of a city and alters the amount of open space at ground level, but also affects the sunlight accessibility and solar gain. Based on the same building floor ratio of the site, an experimental model, YC-height, with higher average height of domestic buildings (78.3 metres) was created to explore the relationship between building height and energy demand (the average height of domestic buildings in the prototype model is 41.2 metres).

The simulation results indicate that the overall energy demands, considering all building types together, are higher as the building height increases. The annual heating demand of buildings in the YC-height model is higher for commercial and school/office buildings and slightly lower for domestic buildings compared to the prototype model (Figure 5). For commercial buildings, there is an increase in heating demand of 1.2 kWh/m²/yr for the YC-height model, whereas for school/office buildings, the increase in heating demand is 6.3 kWh/m²/yr. Furthermore, in the experimental model, over-shading brought about by higher buildings increases slightly, which is supposed to be the reason underlying the rising requirement of heating during the winter time in Yinchuan.

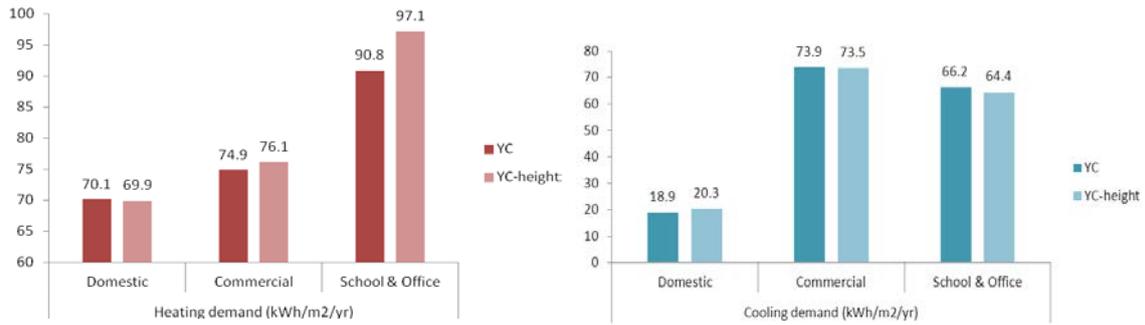


Figure 5 Comparison of energy demands between the prototype and the experimental models with different average building height.

5.3 Orientation of buildings

The orientation of a building is defined as the direction perpendicular to the main surface of the building. Clearly, the orientation of a building affects the solar gain and the energy demand by altering the incident angle and duration of sunlight. It is regarded as one of the most important parameters in housing design in northern China. In the prototype, YC, the direction of the domestic buildings is within plus or minus 15 degrees of a directly south-facing orientation. In the experimental scenario, YC-orientation, all domestic buildings have the orientation of facing south exactly.

The simulation result shows only minor differences in the energy performance of buildings between the two models, with differences of no more than 0.4 kWh/m²/yr for all types of building (Figure 6). Thus, the results suggest that the energy performance of buildings facing directly south and facing close to south in the community scale in Yinchuan are almost the same. The same situation is observed both for the heating demand in winter and the cooling demand in summer. In short, the orientation of buildings in the modelling situation has very limited impact on the energy demand of buildings.

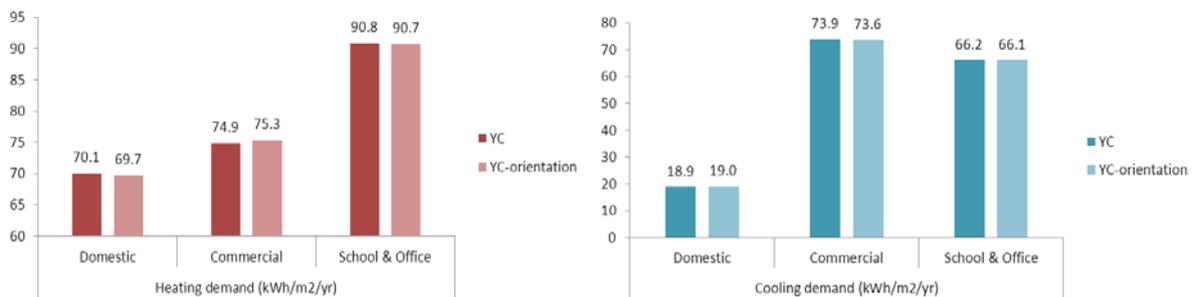


Figure 6 Comparison of energy demands between the prototype and the experimental models with different orientations of buildings.

5.4 Community pattern

Community pattern is another major issue, which has been analyzed by previous researchers with regard to the street geometry formed by buildings and the different horizontal and vertical layouts of buildings. It was demonstrated that the juxtaposition of buildings and the form of external spaces outside the envelopes affect airflow below roof level, cause over-shadow, and change the reflected light, which consequently influence the entire energy consumption of the buildings.

In the experimental model, YC-pattern, the three different types of domestic building (multi-storied apartment group, point block group and slab block group) are arranged from north to south respectively. In contrast, in the prototype, YC, the different types of domestic building adopt a random layout.

The simulation results indicate that the differences in energy demand of buildings between the two models are within 0.5 kWh/m²/yr, with the exception of the heating demand for domestic buildings (Figure 7). Thus, for domestic buildings in YC-pattern model, the heating demand is approximately 2.3 kWh/m²/yr higher than the heating demand of the prototype. Furthermore, for each type of building, a negative correlation is observed between the heating demand and cooling demand in comparing the experimental model and the prototype model. In short, our results imply that over-shading arising from a relatively concentrated and unified community pattern should give rise to an increase in the heating demand of domestic buildings in winter and a decrease in the cooling demand in summer.

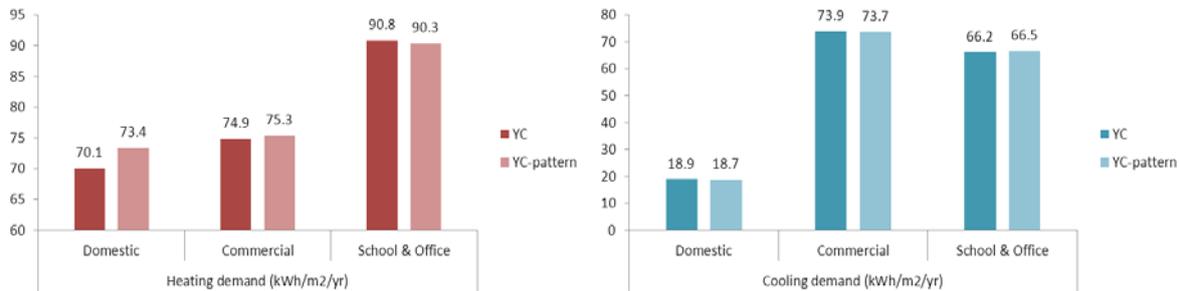


Figure 7 Comparison of energy demands between the prototype and the experimental models with different community patterns.

5.5 Summary

From detailed comparison of the simulation results for the prototype and the four experimental models, several significant conclusions emerge. Importantly, the total energy demand of YC-form is lower than the prototype by 1.6 kWh/m²/yr, the total energy demand of YC-orientation is nearly the same as the prototype, and the total energy demand of YC-height and YC-pattern are higher than the prototype by 2.5 and 3.2 kWh/m²/yr respectively (Figure 8). Consideration of the implications of our results in terms of building design strategies leads for the following conclusions: (1) compact building forms and horizontal and vertical random layouts are one of the most effective strategies for reducing the energy demand of buildings at

urban scale, (2) when the average height of buildings is over 75 metres, the energy demand increases as the average height increases, and (3) moderate changes in the orientation of buildings do not have any significant effect on the energy demand at urban scale. Furthermore, the effect of altering the compactness of building forms may be interpreted in terms of changes in the wall-to-volume ratio of the buildings. Lower wall-to-volume ratios avoid massive heat exchange, leading to better energy performance of buildings.

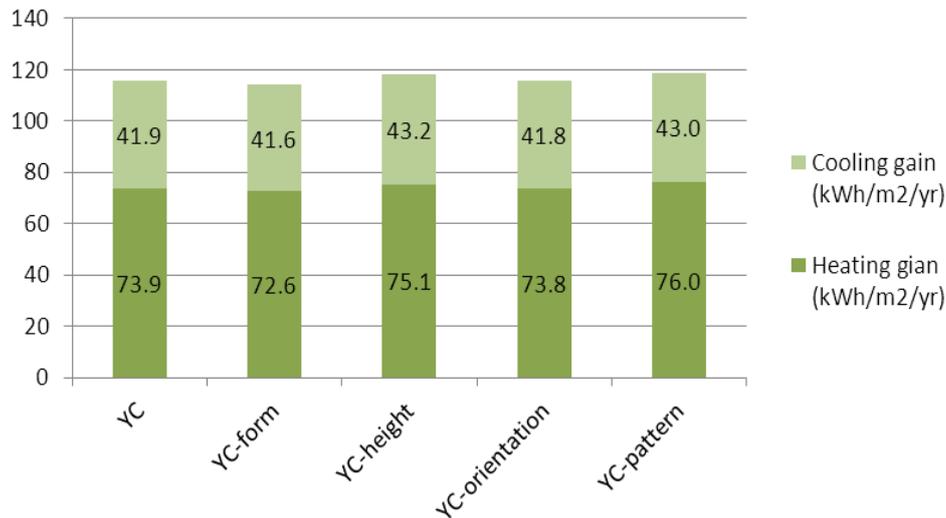


Figure 8 The comparison of annual energy demands between the prototype and experimental models

6. Conclusion

This paper simulates the energy performance of a community based on the urban design scheme of Yuehai Eco-City in Yinchuan, northern China. Four scenarios have been employed representing four different experimental models to investigate the effects of building form, average building height, orientation of buildings and community pattern on the energy demand of different types of building (domestic, commercial and school/office buildings). By comparison with the prototype model, the results of experimental simulations indicate that more compact building forms and horizontal and vertical random layouts of buildings can help to reduce the energy demand of buildings at urban scale. Additionally, when the average height of buildings is over 75 metres, increasing the average height has a detrimental effect on the energy demand. Moreover, moderate changes in the orientation of buildings only have a weak effect on the energy demand of buildings at urban scale.

The findings of this study provide some valuable principles for energy-efficient community design at the master planning stage for cities with continental desert weather type. The primary recommendation from this study is to choose compact building forms; thus, given the same amount of floor area, a decrease in the average wall-volume ratio of buildings should reduce the total energy demand. Furthermore, random layouts in both horizontal and vertical levels are shown to be advantageous over regular layouts. Finally, a lower average height of

buildings is found to give rise to better energy performance, in contradiction to the widely held view that increasing the compactness of cities, in particular by increasing the average height of buildings, should be advantageous for reducing energy consumption.

Lastly, it is relevant to highlight some limitations of this study. Firstly, the prototype model was selected from a proposed design scheme which already incorporated consideration of energy efficiency through the experience of the designer. Thus, there is only limited scope for the experimental models considered in the present study to achieve improvements in energy efficiency relative to the prototype model. However, the accumulative effect of all relevant parameters that influence energy demand at urban scale still requires to be investigated, and such studies should lead to the development of better passive design approaches. Thus, further studies should focus on understanding the effects of groups of parameters and their individual impacts on energy performance in more aggressive situations.

References

- Adolphe, L. (2001). A simplified model of urban morphology: application to an analysis of the environmental performance of cities. *Environment and Planning B*. 28 (2), p183-200.
- Alexander, D. K. (2008). *A model for the thermal environment of buildings in operation - User Manual*. Cardiff, Welsh School of Architecture R&D.
- Alexander, D. K. (2003). Development of the dynamic thermal HTB2: Validation. In: *WSA Postgraduate conference*. Cardiff, 10th May. p 1-13.
- Cheng, V., Steemers, K., Montavon, M. and Compagnon, R. (2006). *Urban form, density and solar potential*. PLEA. Geneva. Switzerland.
- Futcher, J. A., Kershaw, T. and Mills, G. (2013). Urban form and function as building performance parameters. *Building and Environment*.
- Jones, P. J., Lannon, S. C. and Rosenthal, H. (2009). *Energy Optimisation Modelling for Urban Scale Master Planning*. 45th ISOCARP Congress 2009.
- Jones, P. J., Lannon, S. C., Waldron, D., Bassett, T., Li, X., Sayed, M. E., Lin, K. Y. and Yang, L. (2011). *Low Carbon Master Plan Guidance*. Cardiff, Welsh School of Architecture.
- Lin, K. Y. (2013). *Investigating Reducing Building Energy Use at Urban Scale in Taipei*. PhD thesis, Cardiff University.
- Salat, S. (2009). Energy loads, CO₂ emissions and building stocks: morphologies, typologies, energy systems and behaviour. *Building Research & Information*. 37 (5-6), p 598-609.
- Strømmand-Andersen, J. and Sattrup, P. A. (2011). The urban canyon and building energy use: Urban density versus daylight and passive solar gains. *Energy and Buildings*. 43 (8).
- Swan, L. G and Ugursal, V. I. (2009). Modeling of end-use energy consumption in the residential sector: A review of modeling techniques. *Renewable and Sustainable Energy Reviews*. 13, p1819-1835.
- Wong, N. H., Jusuf, S. K., Syafii, N. I., Chen, Y., Hajadi, N., Sathyanarayanan, H. and Manickavasagam, Y. V. (2011). Evaluation of the impact of the surrounding urban morphology on building energy consumption. *Solar Energy*. 85 (1), p 57-71.

Appendix A**Simulation conditions of building construction and materials**

Building type	Construction	U value (W/m ² .C)	Required U value	Materials	Thickness (mm)
Domestic & School	External wall	0.45	0.52	Cement Mortar	10
				RFT Plate	35
				Aerated Concrete Block	200
				Cement Mortar	20
	Roof	0.43	0.45	High Polymer Waterproof Sheet	3
				Fine Aggregate Concrete 2300	30
				RFT Plate	60
				Reinforced Concrete	120
				Cement Mortar	20
	Ground	0.4	0.52	Reinforced Concrete	60
				Autoclaved Aerated Concrete Block	140
				SBS Modified Asphalt Rolling Material	3
				RFT Plate	30
				Fine Aggregate Concrete 2300	60
				Earth	600
Window	2.00	2.8	Glass	6	
			Cavity	12	
			Glass	6	

Building type	Construction	U value (W/m ² .C)	Required U value	Materials	Thickness (mm)
Commercial & Office	External wall	0.44	0.6	Cement Mortar	10
				XPS Plate	30
				Aerated Concrete Block	200
				Cement Mortar	20
	Roof	0.43	0.55	SBS Modified Asphalt Rolling Material	4
				Fine Aggregate Concrete 2300	30
				XPS Plate	60
				Reinforced Concrete	120
				Cement Mortar	20
	Ground	0.28	0.3	Reinforced Concrete	60
				Autoclaved Aerated Concrete Block	140
				SBS Modified Asphalt Rolling Material	3
				RFT Plate	60
				Fine Aggregate Concrete 2300	60
				Earth	600
Window	2.00	3.5	Glass	6	
			Cavity	12	
			Glass	6	

Appendix B**Simulation conditions of building indoor**

		Domestic	Commercial	School & Office
Heating/cooling	Design temperature	18-26°C	18-23°C	18-23°C
	Operation schedule	Monday to Friday: 00:00-08:00&18:00-24:00 Saturday to Sunday: 00:00-24:00	Monday to Friday: 08:00-18:00	Monday to Friday: 08:00-18:00
Internal gains (from lighting, small power and occupancy)	Output power	15W/m ²	35W/m ²	40W/m ²
	Operation schedule	Monday to Friday: 00:00-08:00&18:00-24:00 Saturday to Sunday: 00:00-24:00	Monday to Friday: 08:00-18:00	Monday to Friday: 08:00-18:00
Ventilation	Weekday	0.5,1.0,1.0,26°C	0.5,2.0,2.0,26°C	0.5,2.0,2.0,26°C
		On during 08:00-18:00&18:00-24:00	On during 08:00-18:00	On during 08:00-18:00
	Weekend	On during 00:00-24:00	Off all the day	Off all the day

Appendix C**Simulation conditions of other building settings**

	Domestic	Commercial	School & Office
Window-wall ratio	30%	60%	50%
Floor height	3.0 m	4.0 m	4.0 m

Challenges of Spatial planning in the context of ICT: lessons from actual research projects – new frontiers for spatial planners and cities.

Didier VANCUTSEM, Faculty of Architecture,
Université Libre de Bruxelles (ULB), Belgium

1. Introduction

The emergence of ICT (Information and Communication Technologies) since the 90's modified profoundly our urban environment and the way spatial planning is implemented. This case study aims to explain the importance of the relationship "ICT - Spatial Planning", connected to future frontiers of spatial planning and is based on the results of three projects Plan4all, HLandata and plan4business, where ISOCARP was involved as consortium partner.

2. Role of the ICT in today's Society

In the past 250 years, the World experienced five major technological revolutions and each of these was linked to a specific technological innovation (1771, The First Industrial Revolution in Britain, based on the mechanization of the cotton industry; 1829, The Age of Steam and Railways; 1875, The Age of Steel and Electricity; 1908, The Age of Oil, the Automobile, and Mass Production; and finally 1971, The Age of Information and Telecommunications). Every technical invention and development has resulted in advantages and disadvantages, which have influenced the well-being and prosperity of mankind. But somehow, they have provided the conditions for a long period of sustained economic growth as a process of economic development, which is usually described as a series of waves (Kondratieff waves) (Kondratieff, 1925).

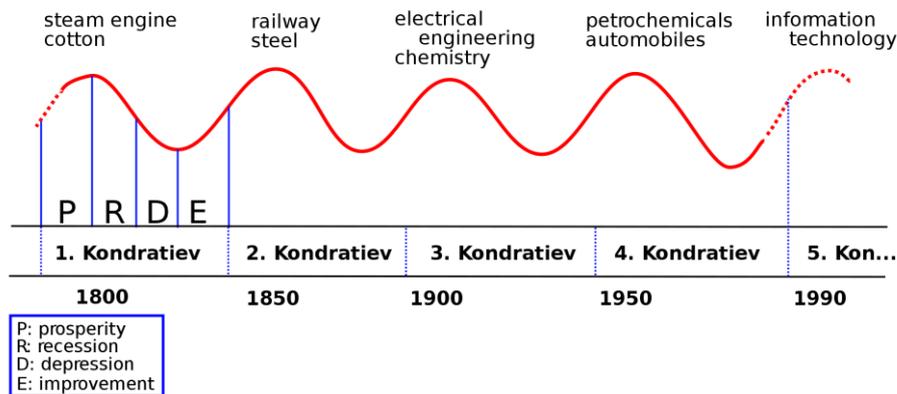


Figure 1: Simplified Kondratieff Wave Pattern (2009), Wikipedia

These technological innovations, characteristic for each periods of technological revolution, had a fundamental influence on the behaviour of man and consequently on society. Such influences can be seen in every level of daily life including living conditions, housing and recreation, and have changed our habits and our culture.

They have also a number of aspects in common. First of all, specific technologies have a wide applicability to a variety of different production processes, generating both process and product innovations. Secondly, because of this feature, they generate a whole series of new applications. Thirdly, because of large and increasing demand for this bundle of innovations, they create and shape new industrial complexes, which can be characterised by a large number of horizontal and forward reaching linkages: **Everything is interlinked.**

Among the five technological revolutions, three are directly linked to the means of transportation and communication: the developments of the steam engine, the combustion engine and the microchip technology in the 60s together represent a shift from the moving of goods, to an increased ease of moving people and exchanging information and ideas.

The integration of digital technology and computers finally resulted in the development of communication technology and the introduction of the term ICT (Information and Communication Technology). Regarding the microelectronic revolution, we are still in the **middle of a learning process**. Considering the on-going developments in cloud computing, multi-touch screens, intelligent systems for houses and communication, broadband and broadcasting, also related to nanotechnologies, it seems evident that the Information and Communication Technology is already dominating and will continue to dominate our way of life in the near future. One aspect is however evident from the past 250 years:

Technological change involves both technical change and organisational change.

It remains difficult to evaluate the effects of ICT on the organisation of society and on spatial and urban planning because the topic is very complex and the microelectronic revolution is still in process. Nevertheless, it is evident that the ICT influence is not direct, but indirect via social and economic trends, which cause changes in the behaviour of each individual in society, the economy and, consequently, in culture.

A rapid transformation is currently taking over advanced industrial cities. Old ideas and assumptions about the development, planning and management of the modern, industrial city seem less and less useful. Accepted notions about the nature of space, time, distance and the processes of urban life are similarly under question. Boundaries separating what is private and what is public within cities are shifting fast. Urban life seems more volatile and speeded up, more uncertain, more fragmented and more bewildering than at any time since the end of the last century.

Related to urban and spatial planning, the use of Information and Communication Technology (ICT) has been under constant development over the last decade and is **becoming a standard today in the worldwide Urban and Spatial Planning context**. Publishing information via the internet, communicating via e-mail, chatting and using interactive, real-time virtual reality to show the results of a planning process is the planners new normal day. Actual development is the “e-planning” philosophy, which refers to the use of electronic processes in delivering planning and development services, such as the online placement and processing of development applications, and the provision of web-based information such as maps, regulations and state and local policies. Such processes are already installed in several administrations around the world and give positive feedback with strong support from government, industry and communities.

Only as an example, the European Union launched in 2010 the Digital Agenda for Europe (DAE), which aims to reboot Europe's economy and help Europe's citizens and businesses to get the most out of digital technologies.

3. Interaction of ICT and spatial planning

Cities and spatial planning are becoming more and more influenced by the use of ICT in the industrial change.

Emerging trends of urban evolution are supported by:

- Digital telecommunication networks such as the Internet and broadband technology;
- “Nomadic” tools facilitating mobile lifestyles, such as mobile phones, wireless, laptops, PDAs, smart phones, pagers, GPS, etc.;
- Decentralised networked intelligence embedded everywhere, in the Internet itself, including also cloud computing; and
- IP services, sensors, smart electrical supply, electronic road pricing and navigation.

Digital telecommunication networks are new types of urban infrastructure, following in the footsteps of water supply and waste disposal, transportation, electrical supply, telegraph and telephone networks. They often replicate the routes and nodes of earlier networks, which both fragment and recombine urban activities and spaces. New networks infrastructures selectively loosen spatial and temporal linkages among activities. Latent demands for adjacency and proximity become reality. This produces simultaneous fragmentation and recombination of urban types and spatial patterns. Some traditional spatial types may disappear, others may transform themselves and new types and patterns emerge.

In the time of information, different combinations of local and remote interactions, together with synchronous and asynchronous modes of communication provide the “glue” that holds communities together. Many options simultaneously exist, with differing costs and advantages. Citizens are able to choose among them within an increasingly complex economy of presence.

The relationship between spatial settlement pattern and modes of communication is illustrated in the table below. The emergence of the information society is demonstrated in a massive shift across the diagonal of the table, from local synchronous interaction to dispersed asynchronous communication. These shifts affect markets and organisations as well as communities, as they produce a new cycle of fragmentation and recombination of familiar spatial types and patterns.

Settlement pattern	Modes of communication		
	synchronic	Semi-synchronic	A-synchronic
local	face-to-face agora 9-5 workplace	post-it notes whiteboards	non-circulating libraries old-fashioned databases
partially dispersed	churchbells sirens loudspeakers	pedestrian and bicycle messengers	LANs Intranets
dispersed	telegraph telephone live broadcast teleconference	Mail systems voicemail email	Internet www dot-coms

Figure 2: Adapted from “Information in the Urban Age”, ISOCARP Congress 2002. Source: Mitchell, 2002

ICT is a significant factor affecting spatial change and consequences can often be rather surprising. This necessarily provides planners with some challenging problems. Spatial change from the point of view of urban and regional planning is always both an opportunity and a threat. However, current on-going changes offer opportunities to use the new possibilities inherent in ICT to enable regions, cities and rural areas to partake in new types of development. New development trends can also threaten the future of these areas. Therefore planners have to find ways to try to forestall such possible negative effects.

On the other side, decentralisation, multilevel governance, public participation, bottom-up approaches, empowerment, local government, regional approach, environmental policies, strategic planning, participative budgets, council of regions, public private partnerships, administrative links, local agendas 21, low carbon concepts and climate change, vertical and horizontal integration, are some of the actual topics considered today in legal bodies and planning practices.

4. Challenges of spatial planning and ICT

Spatial planning has been around for hundreds of years while the World Wide Web is a relatively fresh arrival that has yet to celebrate its 20th birthday. As a consequence, the predominant practices within spatial planning have evolved out of a non-technological environment.

Spatial planners are concerned about spatial features such as residential, commercial, mixed use and industrial areas, about traffic, transportation, and utilities infrastructure, about community facilities and about all information, which impacts the distribution and suitability of the aforementioned areas. The only way to get an overview of and correlate this type of information is maps. Due to the long traditions of spatial planning, this very often means paper maps.

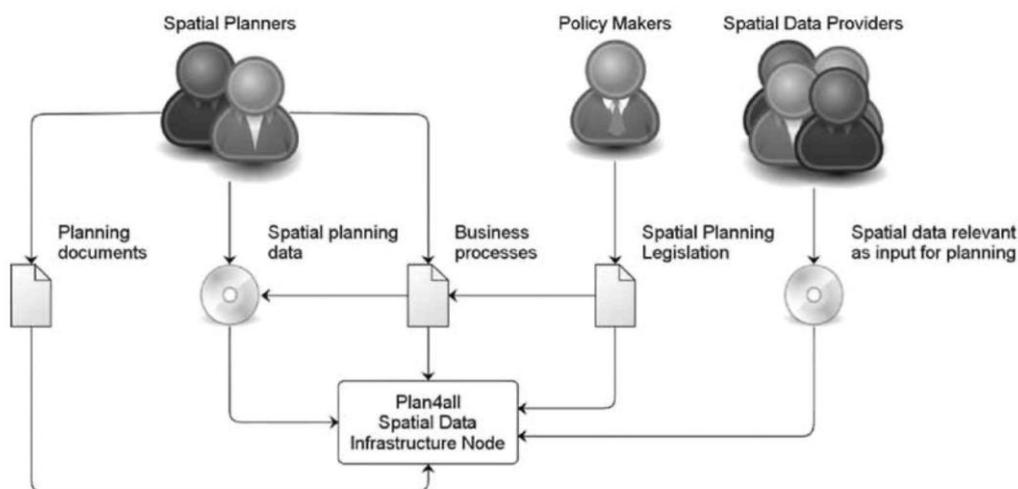


Figure 3: The business of spatial planning is not only a question of maps – spatial planning is about legislation, processes, data, documents and all available information about of a planning area, making spatial planning not only a provider but also a consumer of spatial data. (Plan4all Book, p. 126)

Spatial planners like to draw and conceptualize on maps and, as many are not oriented towards abstract concepts of GIS, express their professional capabilities much more effectively using pen on paper than they would work directly in a digital environment.

While from a GIS perspective, information resulting from the spatial planning process is considered data, the spatial planner will often consider the same information as sketches or drawings – and as a result the often rich by-products of the planning process will not be shareable as it does not conform to any standards interpretable by third parties.

The logical next step for a spatial planner who is used to draw on a paper map is to shift into a CAD environment, which effectively replicates the drawing board in a software environment. In CAD scale and micro-accuracy is of great significance, whereas spatial location and orientation often is not observed. The output is also self-contained drawings,

which print well – but which often do not conform to any form of standard, which makes it possible to transform the drawing into data – shareable and re-usable in a GIS environment.

The first impediment to publishing of spatial data on the Internet is the fact that in most planning laws, the paper map, including its map scale, cartography and underlying base map is what is adopted as the legal spatial plan. This means that publishing the spatial plan as data will not constitute legal data – and may not be desirable from the perspective of the planning authority as it may cause dissent due to use of the data at larger scales and with different cartography which may render boundaries extended or contracted compared to the legal plan.

The second impediment is that introducing static pre-defined data models, controlled vocabularies and GIS software into the equation of spatial planning is a major paradigm shift for the traditional planner.

It is also a shift, which may consume a disproportional share of the spatial planner's professional resource in resolving technical obstacles – and which may curb her or his ability to produce high quality professional work. It must therefore be assumed that the transition from drawings to data will take a significant amount of time.

Such a transition is however necessary if we want to effectively enable not only the use of spatial data as input to planning processes – but also get spatial data as output from the same.

The big software actors in the CAD domain such as Autodesk are currently enabling more comprehensive data intelligence to be embedded into drawings, gradually bringing the universes of CAD and GIS closer together, whereby facilitating the INSPIRE Directive objectives of enabling and efficient use of spatial data across professional disciplines.

5. Learning from research projects

During the past years, several research projects were developed in the European Union, related to the European Directive of “INSPIRE”: the INSPIRE (INfrastructure for SPatial InfoRmation in Europe) Directive aims to establish a European Spatial Data Infrastructure and entered into force in May 2007. The Directive defines SDI (Spatial Data Infrastructure) as “... metadata, spatial data sets, spatial data services; network services and technologies; agreements on sharing, access and use; coordination and monitoring mechanisms, process and procedures, established, operated or made available in accordance with this Directive...” (EC, 2007, art. 3.1).

INSPIRE does not aim to establish new infrastructures, but it is based on infrastructures created by Member States that are made interoperable by common Implementing Rules (IRs) and measures established at the Community level. The purpose is to align national legislation and achieve a joint result within European Member States.

Although the Directive specifically aims to support European environmental policy, INSPIRE is having a great impact on the European GI community. The correct implementation of the INSPIRE Directive could represent a big step towards effective information sharing to support problem solving. INSPIRE represents a solid foundation on which to build wider interoperability of spatial planning in Europe, since it takes into consideration current standards and practices in the field of SDIs, and summarises the point of view of most stakeholders.

The plan4all project was a European project co-funded by the Community programme “eContentplus” between May 2009 and October 2011. Plan4all was a consortium of 24 partners including universities, private companies, international organisations and public

administrations, and where ISOCARP contributed to the findings on spatial planning and dissemination. The main objective of the project was to harmonise spatial planning data and related metadata according to the INSPIRE principles. The project focussed on 7 aspects of the INSPIRE directive: Land cover, Land use, Utility and Government services, Production and industrial facilities, Agricultural and aquaculture facilities, Area management / restriction / regulation zones and reporting units, as well as Natural risk zones.

For this purpose, the Plan4all project first promoted Plan4all and INSPIRE in countries, regions and municipalities; designed the spatial planning metadata profile; designed the data model for selected spatial data themes related to spatial planning; designed the networking architecture for sharing data and services in spatial planning; validated the metadata profile, data models and networking architecture on local and regional levels; established a European portal for spatial planning data; and finally deployed spatial planning data and metadata on local and regional level. www.plan4all.eu

The second project (April 2011- April 2013) called “HLanData – Harmonisation of land use and land cover datasets”, was aiming to demonstrate the feasible European level harmonization of the Land Use and Land Cover datasets taking into account both the data categorization and the data models, for any of their possible uses and users, through the development of user oriented value-added services.

Starting point of the project was that there is no valid data harmonization model for the Land Cover and Land Use datasets, taking into account both the data categorization and the data model and the end users’ specificities, which could be valid for all the application areas and at a European level. Therefore, the project HlanData aimed at making a significant step forward in overcoming the aforementioned barrier, fostering the use of the Land Use and Land Cover geographic data at a European level, through the creation of value-added European services. In order to achieve this objective, newly developed web services were used for the implementation of 3 pilot projects in 3 different application areas, used to validate the harmonization proposal made:

- PILOT 1: Land Use- Land Cover Data Analysis System for intermediate-level users
- PILOT 2: Harmonized and Interoperable Land Information Systems
- PILOT 3: Stratification of waste dumps

The conclusions of the HlanData project and the harmonisation methods of the data models were integrated into the INSPIRE geoportal.

The project plan4business (April 2012 - April 2014) is focussing more on the implementation of the Directive and the accessibility of harmonized datasets. In this case, plan4business is developing a platform serving multiple providers and thus offering users a full catalogue of planning data such as transport infrastructure, regional plans, urban plans and zoning plans. Such an aggregation platform will not just offer clients the data itself in integrated, harmonised and thus ready-to-use form, but will also provide rich analysis and visualisation services. Such services can be offered via different interfaces, such as an API and an interactive web frontend (Web GIS).

6. Conclusions

The work of urban and spatial planners has shifted from maps to data.

The most promising feature offered to spatial planners by SDIs is the ability to quickly identify all available spatial data for a planning area. As opposed to the business process changes required to create spatial data, the changes required to efficiently use spatial data as input to the planning process are considerably less.

By using and having harmonized spatial datasets, the spatial planner is able to control and develop much wider and integrated solutions, by tacking into account all parameters of spatial development.

It is also to be noted that whereas GIS used to be an expert discipline reserved for domain professionals, the art of digital map making, combining information from a multitude of sources and browsing it on the computer screen is now at the fingertips of any contemporary computer user. This may facilitate a behavioural change whereby less of the map information will have to be printed and more may be accessed directly online from decentralized View and Download services.

Therefore, Spatial Data Infrastructures Networking architectures have a great potential to improve the quality of spatial planning enabling quick overview of and access to all spatial data available for a certain planning area, thus ensuring quality input to the spatial planning process.

It is however necessary to understand that spatial planning is not only maps and spatial data but also planning documents and planning laws, which needs to be available to unambiguously interpret the planning data.

Furthermore, a bridge between the mapping and digital cartography environments of CAD and GIS is needed in order to support the flow of information between homogeneously GIS oriented SDI infrastructures and highly heterogeneous mix of CAD and GIS being used in spatial planning authorities.

In addition to the possibilities offered by the technology, behavioural change is required among the spatial planners to effectively exploit the possibilities of the SDI Networking architectures in their day-to-day operations.

References:

- Castells, M., (1996), *The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I*. Cambridge, MA; Oxford
- CEMAT (1983), *European Conference of Ministers responsible for Regional Planning*
- ISOCARP (2009), *International Manual of Planning Practice*, ISOCARP The Hague
- Knaap, G. A. van der and Linge G. J. R. (1987), *Technology and industrial Change*, London, Croom Helm
- Mitchell, W. (1999), *e-topia*, MIT Press London Cambridge
- Mitchell, W. (2002), *Planning and design for the information age*, ISOCARP The Hague
- Mumford, L. (1961), *The City in History: Its Origins, Its Transformations, and Its Prospects*, Mariner Books, London
- Nooteboom, B. (1999), *Inter-firm alliances, analysis and design*, London, Routledge
- Nooteboom, B. (2009) *Evolutionaire economie. Economisch Statistische Berichten*, 94 (4571), 655, Tilburg University
- Rostow, W. W. (1960), *The stages of economic growth*, London, Cambridge Press
- Vancutsem, D. (2010), WP2, *European Project Plan4all*, www.plan4all.eu, European Commission

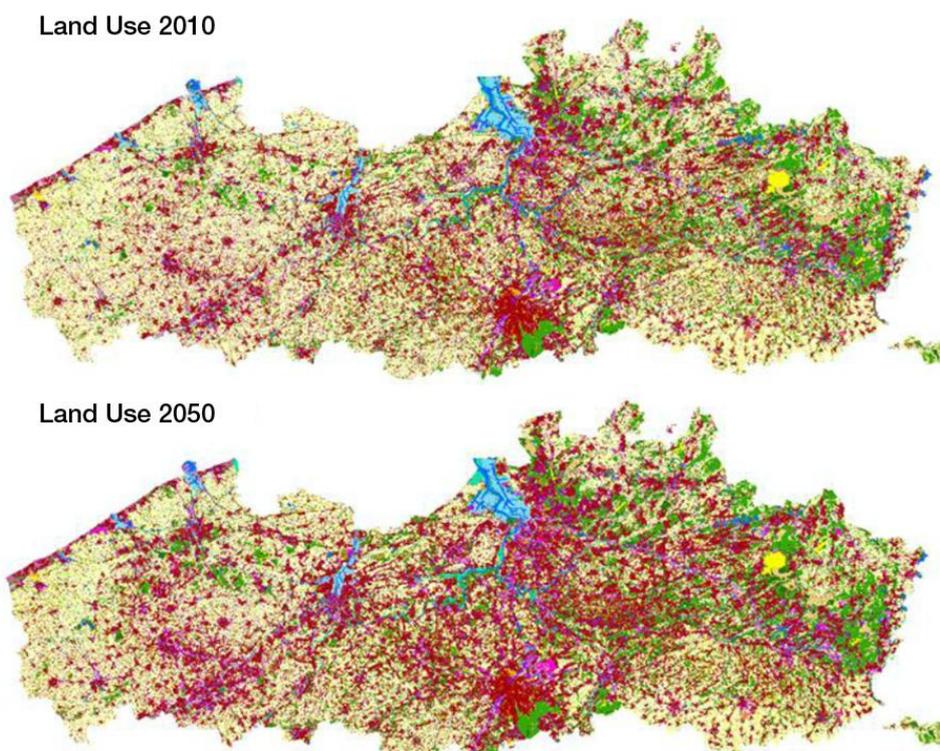
New spatial strategies for the densely built-up Flanders region (Belgium)

Guy Vloebergh, CEO of the private planning company OMGEVING cvba, Lecturer at ARTESIS University College Institute and University Antwerp - BELGIUM

1. Introduction

In 1997 the Flemish parliament approved the Spatial Structure Plan, and a coherent spatial vision was formulated in this policy plan under the motto of “Flanders, open and urban”. Flanders, the northern part of Belgium, is in fact characterised by a high population density (450 inhabitants/km²) and an extremely spread-out pattern of construction. From this ambitious spatial policy plan, over the subsequent 15 years there followed a great deal of planning processes concerning urbanicity, living, open space, infrastructure and industry, steered by the Flemish government. Provinces and municipalities likewise drew up spatial structural plans for their regions. In addition, and in order to realize these visions, these three policy levels are also engaged in spatial implementation planning (land use plans). In spite of all such activity, and the accompanying expansion of administrative services for spatial planning on the three policy levels, the further urbanisation of open spaces in Flanders continues apace. Between 1990 and 2007, the total area of developed space increased by +22 %, housing space by +37 %, and space for commercial and industrial activity by +27 %. Agricultural space shrank by 6.5 % and 3 % of woodlands and nature reserves disappeared. Forecast figures for 2050 indicate that, without changes to the existing policy and additional measures, this fragmentation will record an enormous increase. It is, especially, the central region between Brussels, Antwerp, and Ghent that will witness ongoing urbanisation towards the creation of a major urban conglomeration of continuing and ever-spreading lateral expansion.

Figure 1: Increasing fragmentation of space in Flanders



Aside from its involvement in the above-mentioned regular plans, the Flemish authorities have since 2004 been in the process of developing a subsidisation instrument in the form of financial support for complex and strategic projects with a view to accelerating their implementation. These successful 30 strategic projects are not initiated but subsidised by the Flemish government. To a greater degree than other projects steered top-down, these are focused on the effective realisation of spatial policy in Flanders.

Working with 'strategic projects' has developed into a new spatial strategy in densely built-up and spread out settlement structure Flanders. In this paper (1) the success factors of this approach are defined and (2) two strategic projects are explained more comprehensively.

2. Success factors of this approach

2.1 Strategic projects

What are strategic projects in Flanders? A strategic project is a multi-faceted planning assignment that interconnects and harmonizes existing and current planning initiatives by various administrations and partners. When this attempt is successful, the project effectively becomes strategic, acquires a sustainable character, and is thus enabled to continue for the long term, hence spanning a number of legislatures. The development of each and every strategic project is different and, in all cases, customized and tailor-made. Common to all of them is the fact that their realisation is area-focused and integrated. What is generally lacking is, on the one hand, spatial cohesion and harmonisation amongst the diverse sectoral plans and, on the other, insights into the links between vision and concrete realisations. Many problems and opportunities remain mired in contradictory visions, lack of dialogue, and the absence of a project structure. In order to re-energize these situations of stagnant immobility, the Flemish authorities have decided to subsidize the appointment of a project coordinator, with proviso that the application for accreditation be worked out and submitted by the local partners.

2.2. Strategic projects arise 'bottom-up'

Strategic projects arise 'bottom-up' and are initiated by local authorities (municipalities, provinces and other partners), in a collaborative partnership spontaneously arising around a set of issues. Of essential importance is the conviction amongst the local partners that the project will generate added value. Strategic projects ought at least to possess characteristics that transcend municipal boundaries, which should lead to a new kind of collaborative partnership. Some strategic projects extend across several provinces or even national borders. Many actors already find it a challenge in itself to collaborate with their neighbours in a project structure. This local embedment is especially valuable given that also the realisation of large-scale projects at the Flemish provincial level needs to be implemented and realized locally. The orientation towards the realisation of such projects means that the pursuit of a local platform is, in fact, particularly important. When the 'engine' that drives the strategic project is made up of a project team with adequate representation of local actors, chances for success are excellent.

2.3. 'Seizing opportunities' resulting from autonomous processes is central in these strategic projects

Every municipality, every province, the Flemish Region itself, and each and every sectoral policy area within these administrative structures are drawing up plans. Flanders is suffering from an increased partitioning in its diverse sectoral planning (environment, mobility, economy, tourism, agriculture, commerce, etc.), each in its own way laying claim to the available space. In area-focused projects, chances and opportunities are embraced that by the very fact of an integrated approach are very likely to lead to a win-win situation. Given that strategic projects are oriented precisely towards implementation, these opportunities may lead to realisations. There is, nonetheless, the condition that the partners involved are

prepared to work together in an atmosphere of sufficient openness and with a taste for dialogue and are willing to collaborate in a search for solutions. Starting from a strong project structure, it is likewise possible to entice reluctant actors to join in the collaborative partnership instead of staying on the sidelines. Also in terms of the collaboration, it is possible here to book good results. It would even be better if this were also further extended into joint financing towards the implementation of the (part)projects.

2.4. Financial support for the salary and operational costs of a project coordinator

After selection, the Flemish government provides financial support for the salary and operational costs of a project coordinator for 3 years, amounting to 100,000 Euro p.a. By means of this financial stimulus, the local actors generally manage to erect a transparent project structure that is being continuously reinforced and directed by the project coordinator. Furthermore, the local actors involved in the project are being asked to contribute an additional 20 % financing. This increases local responsibility for, and commitment to, the project. The local actors establish independently how to give form to the project coordination and where to allocate the subsidy amount. Semi-annually, the Flemish authorities request a progress report while, annually, a progress meeting is being organized. It is important here to create a subtle balance between making funds available towards the project coordination and monitoring the objectives and the results of the implemented process.

2.5. A professional and independent project coordinator

A professional and independent project coordinator is an essential condition for being able to achieve complex and strategic projects and results with an exemplary and leverage role. The project coordination of strategic projects is hardly a task to be entrusted to inexperienced individuals. The assignment is mostly offered to professional senior spatial planners, seeing that they possess both a broad knowledge of the complex range of implementing instruments and the ability to fashion the links between vision formulation, operationalisation, and implementation. Ever more frequently, the project coordination is being handed to a team that will be responsible for the project's realisation, monitor its continuity, and steer the process in all of its facets, both on the official administrative and the political levels. The ability to function independently is likewise a must for the project coordinator. He/she needs to gain and enjoy the confidence of all actors and partners. He/she ought to be able to operate with sufficient authority and legitimacy. The strategic projects, the coordination of which is being entrusted to, for instance, a civil servant of one of the involved administrations / partners, hence may (not infrequently) demonstrate a greater rigidity in the way in which they are being run. In addition, the project coordinator must ensure synchronisation and consultation. He/she looks for opportunities to create visualisation of various aspects of the plan, thus generating a savings in time. This kind of coordinative process thus ensures that the breadth and scope of the plan is being suitably clarified for the partners.

2.6. Land purchase subsidy

On implementation, land policy often proves to be crucially important for achieving spatial objectives. For this reason, a subsidy of up to 500.000 Euro can be requested on top of the project coordination for land purchases. During the implementation of a strategic project, land policy frequently proves of crucial importance. It is often necessary to change the ownership of land and buildings in order to realize spatial objectives. To circumvent impediments of that kind, this additional subsidy presents the project partners with an interesting opportunity towards the realisation of (part)projects in the field.

2.7. The organisation of a strategic project

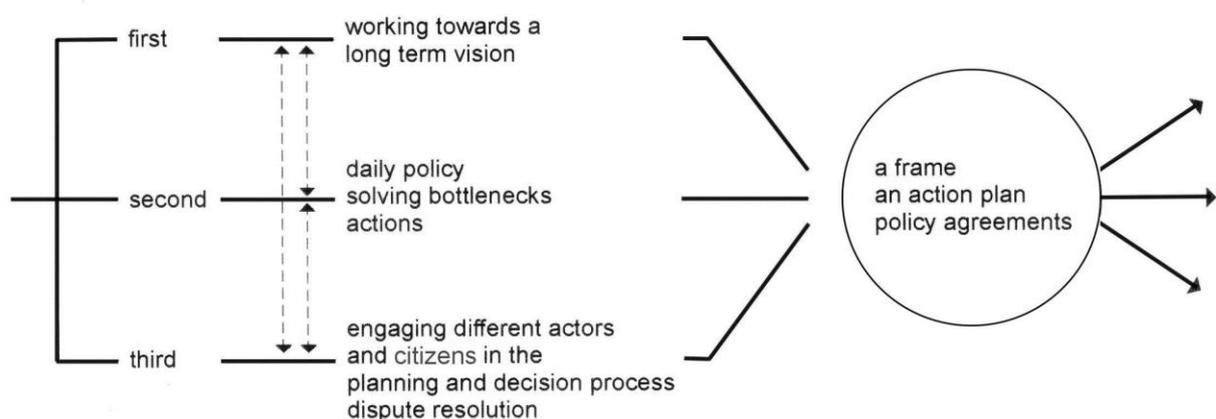
It is advantageous to consider the structure and composition of the collaborative partnerships, and the interaction in each strategic project. Customisation is a keyword in this respect. A strategic project is characterized by the presence of key actors such as

municipalities, provinces or Flemish services, non-profit organisations, or enterprises that jointly constitute the project structure of the core group and participate in subscribing to the project. The official applicant of a strategic project, however, needs to be a public body. In addition, there are a host of other partners that, in a less formal manner or to a rather indirect degree, are involved in the project. Some of the projects may attract the participation, in some way or other, of more than one hundred actors. How do all of these partners collaborate with one another? Generally, we distinguish within the organisation of strategic projects a project group or key team, a steering group wherein managers are brought together in order to arrive at decisions in a process of policy consultation, diverse working groups deliberating about themes, part-problems and/or part-areas, and groups acting as sounding boards, or more scientifically oriented advisory groups. Important is the fact that the manner of collaboration be organic and attuned to a process 'in motion'. Working groups keep coming and going on an ongoing basis, steering groups gather with a frequency as determined by the process itself, the project group or the key team ensures continuity and provides direction for the project coordinator on a daily basis.

2.8. All strategic projects are multiple planning tasks

All strategic projects are multiple planning tasks that are only realised if a robust basis is built up within the context of open plan processes. Three tracks run throughout each process: (1) working at a long-term vision for the project in the form of a structural sketch, masterplan, visual quality plan, and the like; (2) reacting to concrete problems, permit applications, chances to realize part-aspects and to ensure that no short-term decisions be taken that are contradictory to the long-term objectives; and (3) the building-up of a platform through consultation and communication. The creation of a platform is essential for the successful realisation of concrete actions in the field. The idea is to effectively involve the citizen in the process by means of open and pro-active communications. To this end, a variety of instruments are being deployed, such as the development of a house style and logo, website, brochures, newsletters, meetings, walking tours, exhibitions, events and animated and imaginative entertainment, and the like. The key to success for the project coordinator consists in his/her ability to properly manage the coupling and intertwining of these three tracks, to ensure that decisions be taken promptly, and to ascertain the continued realisation of part aspects within the strategic project.

Figure 2 Methodology for 3-track planning



2.9. Dynamics arise at micro level

Dynamics arise at micro level through the innovative capacity of individuals and groups, stimulated by governments. Various different strategic projects have been experimenting with all sorts of forms of innovative agreements: charters, statements of intent, collaborative

agreements, in principle decisions, and administrative agreements are just a few examples. The creativity to have the process advance and achieve progress via interim decisions needs to be present at the local level within the project group and with the project coordinator. Decision moments create tension, which is welcome at regular intervals in the process. Certainly for what concerns long-term strategic projects, regular monitoring and evaluation of progress in the project are self-evident, indispensable conditions for the engagement of the partners.

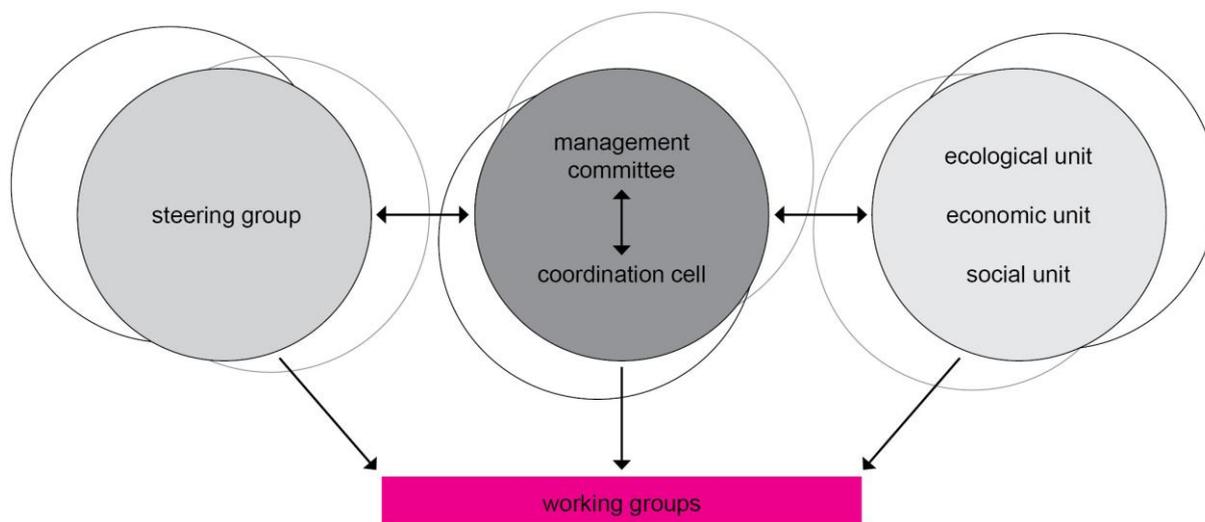
3. Two strategic projects : (1) BOSLAND, the development of the largest and most child-friendly woodland in Flanders, and (2) ALBERTKNOOP, the realisation of a cross-border, innovative and multi-modally developed business area adjoining a substantial green belt.

3.1. BOSLAND

As the largest wooded region in Flanders, Bosland enjoys international recognition. The strategic project aims at the creation of the largest child-friendly woodland in Flanders (ca. 10.000 hectares in area) and at the further development of the region in a sustainable and socially integrated manner. The project pursues the creation of a qualitative environment wherein woodlands and the general natural environment be protected against further encroachment of intrusive forces. Project partners in this are the Flemish Agency for Nature and Woodland, the municipalities of Hechtel-Eksel, Lommel and Overpelt, Tourism Limburg, and the Regional Landscape of the Lower Kempen. These partners have been united within a steering group and a management committee, bodies that also direct diverse working and deliberative groups.

Figure 3 Project structure BOSLAND

An Open Project Organisation



The Bosland Story can be told on the basis of three main themes:

- 'Boom in – *All About Trees*' tells the story of woodland and timber within the project area
- 'Terug in de wortels – *Back to the Roots*' recounts the project area's rich history
- 'Bijt in het zand – *A Taste of Sand*' examines the subsoil level and examines the use of sand throughout the centuries.

The Masterplan Bosland 2020 presents an integrated future picture as a framework of diverse concrete actions, amongst them additional forestation, fragmentation, new pathway connections for walkers and hikers, bikers, and horseback riders. Also in Bosland there is ongoing groundbreaking research work, for instance, in the area of woodland development, timber production, biomass(energy), eco-system services, ecology, the protection of natural floral varieties, in concert with the use of the area for recreational purposes. Via child-friendly activities, people, school groups, and tourists are being attracted the region (www.bosland.be).

3.2. ALBERTKNOOP

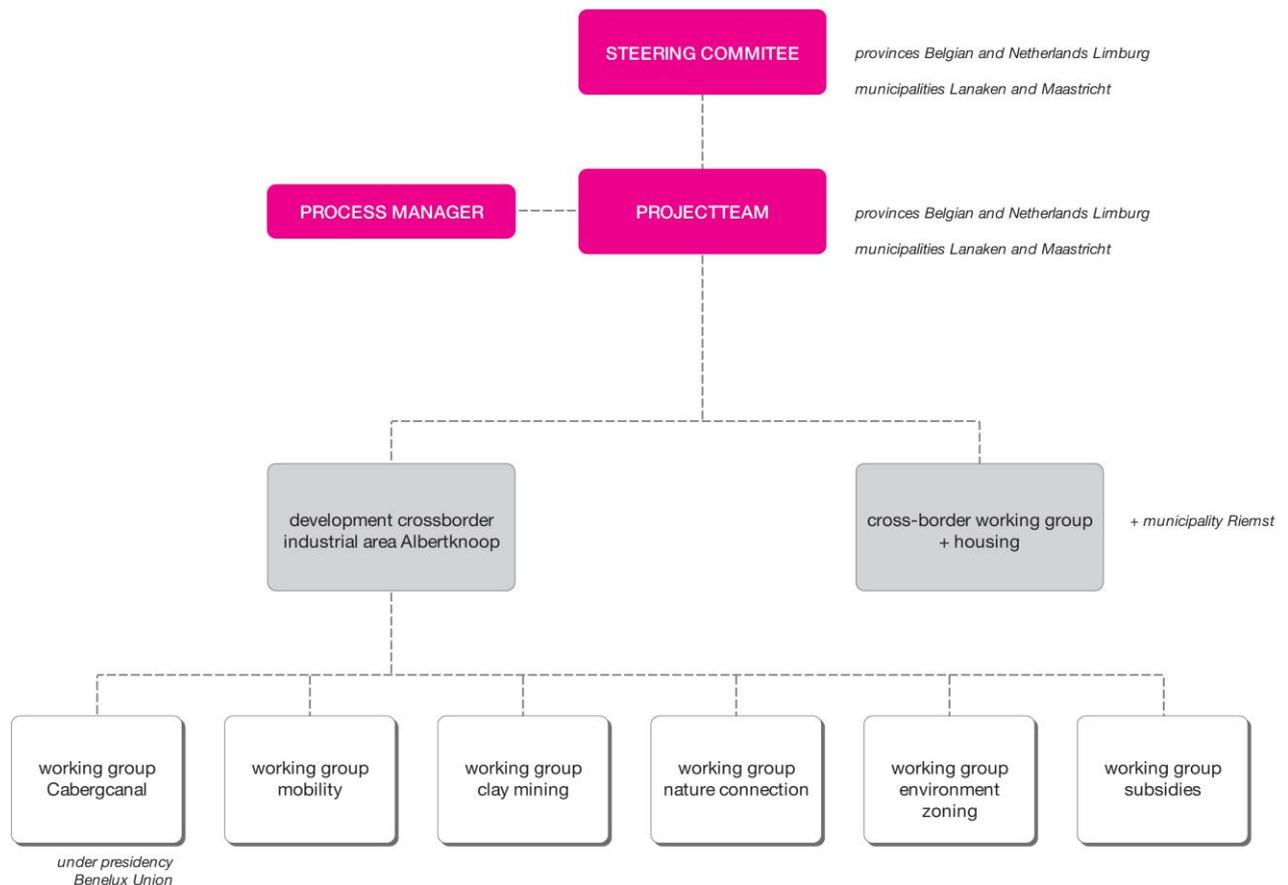
The strategic trans-border project ALBERTKNOOP was started with the aim to create and open up within the border region between the Dutch city Maastricht and the Flemish municipality of Lanaken a multimodal and regional industry park, to be situated within the area in a sustainable and integrated manner. The project fits within the Albert Canal Economic Network (ENA), which in the Spatial Structural Plan Flanders is designated as an important region for the future spatial economic development of Flanders and the Euregion. The national frontier between Belgium and the Netherlands runs straight through that project area, which is further bordered by the currently back-in-service freight transport railroad connection Maastricht-Lanaken, the Albert Canal up to the Veldwezelt Bridge, the trans-border open space Zouwdal, the existing housing development Malberg (Maastricht), and the restructuring and urban renewal area Belvédère, located within the territory of Maastricht.

Project partners are the provinces of Belgian and Dutch Limburg, the City of Maastricht, the Lanaken municipality, and the company NV De Scheepvaart.

In the course of an extensive consultation process with the involved actors, the project coordinator (called the border manager) is here to sweep away all impediments that are compromising and prejudicing the realisation of a trans-border, sustainable, integrated, and tri-modal accessible industry park covering 90 hectares in surface area.

Themes up for discussion are, amongst others, the scrapping of the Caberg Canal from the 1961 Treaty concluded between the Netherlands and Belgium, the unlocking of multi-modal potential, the advance loam extraction, the planned nature connections, water management, and the integrated organisation of the border region. In a more distant future, (2020-2030) as an adjunct to the existing industry park 'Europark' in Lanaken, one new large-scale trans-border industry park will be created. This trans-border harmonisation of reciprocal development objectives and permit trajectories remains as always a central focal point in the process. The steering group ALBERTKNOOP, the decision-making body within the consultative process, explicitly is opting for a area-focused approach wherein, from a spatial perspective, special attention is being devoted to problems that are inherent in the region, and solutions are presented on the basis of the qualities and potentialities offered by the region. This way, not only due attention is given to a conflict-free border zone, but also the border itself stimulates an array of win-win situations and joint projects within a new urban and suburban context. Aside from the project work in function of the industry park to be established in the future, the steering group likewise placed the problem of trans-border living on the agenda (www.albertknoop.be).

Figure 4 Project structure ALBERTKNOOP



4 Epilogue

With these strategic projects, the Flemish government is taking a major step from generic to specific policy: the area-focused approach and the importance of 'governance' are becoming more important.

Thanks also to this strategy, the spatial policy within Flanders is evolving towards an open network structure wherein activities are becoming ever more area-focused and integrated. The Flemish authorities are concentrating more and more on realisation-directed planning, with much operating room and initiative offered to local partners. In Flanders, any ambitious local project will, because of the scale, turn invariably and quickly into a project at the Flemish level.

Major challenges are found in (1) quality control and the further enhancement of the professional dimension of the instrument 'project coordination', to which ever more recourse will be had for the realisation of strategic projects, and (2) the indispensable financing of the realisation of the strategic projects in the field, where it behoves Flemish authorities to assume their responsibilities. The more strategic projects lead in the practice to qualitative realisations in the field, the better this instrument can be deployed strategically to counter the further fragmentation of space and the loss of ecological diversity.

Reference

Planning in progress, strategic projects within the Flemish spatial policy, Departement Ruimte Vlaanderen – Spatial Flanders Department, depot-number D/2012/3241/276.

Biography

Guy Vloebergh (Belgium) has been CEO of OMGEVEING cvba since 1998, a private design and planning company with a passion for the living environment (guy.vloebergh@omgeving.be), since 2004 a professor of urban planning at ARTESIS University College of Urbanism and Spatial Planning in Antwerp, since 2009 Manager of the Strategic Cross-Border Project ALBERTKNOOP and since 2012 chairman of the National Delegation of Belgium planners in ISOCARP.

Synopsis

Working with strategic projects has been introduced by the Flemish government since 2004. More than 30 projects got the label 'strategic' and got money to organize the project coordination. The beginning of a new spatial strategy for the densely built-up Flanders region?

The concept of Sustainable Land Management: a comparative discussion (at a global scale)

Thomas WEITH, Annegret REPP, Christian BESENDÖRFER, Leibniz-Centre for Agricultural Landscape Research (ZALF), Germany

ID 182

Synopsis: The paper seeks to initiate a discussion about the concept of sustainable land management in an internationally comparative perspective, based on experience from a German research funding measure. To enable exchange and mutual learning, it will particularly focus on the variety of definitions and main contents like governance approaches towards the solution of land use conflicts with regard to main drivers for land use demands and with regard to different multi-level governance frameworks and modes.ⁱ

1. Sustainable land management – diversity of terms and contents

What is "sustainable land management"? What is behind this term and what does it mean? Is it all just "old wine in new bottles"? Or - on the contrary - a new paradigm with different overall concepts, objectives, action principles and implementation forms? Is it a new type of cooperation between science and practice, or a greater focus on the effectiveness of action approaches? Up to now there is no definitive and generally accepted definition for the term in scientific literature and communities of practice.

Mankind has influenced landscape for centuries and created different types of land use. With regard to the development of land use in Europe, main drivers of currently increasing influence comprise changes in values (e.g. sustainability), economic and social trends (e.g. globalisation, demographic change), technological innovations and political priorities (e.g. in climate and biodiversity policy). A high variety of institutional arrangements and regulatory schemes on several policy levels (EU, national, regional, local) has been initiated in order to deal with these land use demands and resulting land use conflicts. Examples include European agricultural policy (e.g. cross-compliance rules) and water policy (Water Framework Directive), national development procedures (e.g. spatial planning in Germany, Austria and Switzerland), regional development schemes (e.g. in the UK) or local planning and building schemes.

Land management questions and activities vary considerably, with the usage of the concept of sustainable Land management being related to different understandings and governance approaches, depending on the geographical area and policy context (Weith et al. 2013). The German funding measure "Sustainable Land Management", financed by the German Federal Ministry of Education and Research (BMBF), comprises 13 joint projects within Module B, working on the development of innovative system solutions for sustainable land management in different regions in Germany. Due to the high variety of involved actors and complex interactions one main aspect of research refers to handling complexity by inter- and transdisciplinary methods (Klein et al. 2001). Public actors, companies or civil society actors are seen as starting points, nuclei, and development partners for the implementation of sustainable solutions in land management. In that context, all projects seek to combine contents of governance in a synergetic way. Examples include the combination of water management with waste management, water management with energy supply, settlement development with mobility aspects or housing and energy consumption. However, these approaches are

mainly embedded in and adjusted to the German and EU policy context. Enhanced international exchange on the understanding and concept of sustainable land management and a comparison of approaches will thus enable researchers and practical experts to benefit from each other.

Even the subject area, "land", is open to various interpretations. It would be easy to associate it with slightly simplistic limitations, such as restricting it solely to non-water-covered areas outside the city (city *and* land). Recent works (e.g. HABER ET AL, 2010) make it clear, however, that this definition is too narrow. The focus is rather on the struggle for land use in the human-environment system, with a variety of competing and sometimes conflicting utilization claims and the natural capacity of ecosystems and their compartments.

The use of land, or in this context, soil, is always in a tension field between conservation, development and the restoration needs of the functions of a public good (e.g. habitat function, groundwater replenishment function) due to its different capabilities (e.g. development potential, ecological functions) and utilization opportunities in connection with assigned property rights. The differentiation of *land values* by DAVY in to *exchange value*, *use value*, *territorial value* and *existence value* (2012: 89ff.) reflects this and also highlights the need for an explicitly spatial view. Reflecting this spatial focus, approaches to further include material and energy flows when considering land use questions in terms of spatial use structures have existed since at least the late 1980s (see e.g., HOFMEISTER/HÜBLER, 1990). Balancing concepts for resource flows, such as urban metabolism, were developed as early as the 1960s (e.g. WOLMAN, 1965).

The concept of sustainability in sustainable land management refers to a diverse and long-running dispute over the direction of societal action. For all the ambiguity and diversity involved in defining the term precisely, the definition contained in the Brundtland report is often mentioned as a general starting point. It contains the formulation, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCED 1987). Resolutions from the Rio Conference of 1992 are referenced just as often in social discussions. This is accompanied by a claim to validity which can be characterized by the key words, global, inclusive, future-oriented and anthropocentric (JÖRISSEN 2005). The key aspects are intragenerational and intergenerational equity and the three-dimensional approach (the ecological, economic and socio-cultural dimensions).

The management concept refers to anthropogenic activities in different contexts. The existence of terms, such as city management, regional management, site management or water management, highlights the fact that limiting the meaning to functional and process-oriented, business-related actions would fall significantly short. The concept of governance, a term often used in social-scientific spatial research, as "coordinating and controlling regional processes in complex structures" (BENZ 2003:505) opens up many possibilities for subject-related discussions and clarification. A key aspect of such refocusing is the lack of a central manager. Rather, it is interactions between the different stakeholders that can lead to readjustments in social structures (control systems) as well as physical and material aspects (BURNS 2006). Influencing stakeholders' behaviour or actions (also inaction) always raises the question of the need for transformation or innovation processes.

Even common management literature refers to a central challenge in such constellations: dealing with complexity (STAEHLE 1999: 43). Therefore, systemic thinking can be considered

crucially important to understanding the interdependencies between the various system elements.

2. Explicit use of terms

Having already discussed various regulatory aspects in Agenda 21, as part of the World Conference of the United Nations in Rio in 1992, which have a close relation to sustainable land management (statements on re-use of land, urban development, agriculture, forestry, etc.), the term *sustainable land management* was explicitly used for the first time in an FAO document (SMYTH ET AL.1993) entitled "FESLM: An international framework for sustainable land management", reaching a wider expert audience. The aim of the authors was to create a basis for evaluating "sustainable land management" as an accepted harmonization of the economic and ecological aspects of food security. The underlying understanding of the term was based on discussions at a series of workshops at the beginning of the 1990s in various countries (Thailand, Kenya, USA, Canada). The workshops were organized by the International Board for Soil Research and Management (IBSRAM) and the University of Lethbridge, Alberta, Canada (SMYTH ET AL, 1993). In 1996, in a separate document with a similar focus, the United Nations (UN) described land management as process-oriented resource management in the context of ecological and economic perspectives (UN 1996: 13). However, the social dimension is not considered here.

In consequence it is obvious, that the term "sustainable land management" or "sustainable land management" is often used with a specific bias in the context of development policy. In addition to the FAO, other United Nations sub-organizations and programmes (e.g. UNEP/UNU, UNDP), the World Bank, the Latin American Development Bank, the European Commission and the German development agency, GIZ, use it in their work. The focus is on dealing with the problems of soil protection. In this context, the term is also normatively used for demands for participation, rights of access to land, sustainable marketing and reforestation (World Bank/Global Environmental Facility) and combating urban poverty (access to resources).

In its "Rural Strategy", the World Bank refers to investment opportunities to increase agricultural growth and reduce poverty. Sustainable land management is also seen as a possible solution here, whereby both increases in productivity and ecosystem services are addressed (WORLD BANK 2008: 3). According to the perspective of the World Bank, knowledge as a resource is equally important to be able to integrate different management areas, "Sustainable land management [SLM] is a knowledge-based procedure that helps integrate land, water, biodiversity, and environmental management (including input and output externalities) to meet rising food and fibre demands while sustaining ecosystem services and livelihoods. SLM is necessary to meet the requirements of a growing population. Improper land management can lead to land degradation and a significant reduction in the productive and service functions." (World Bank 2008, quoted according to the World Bank 2006).

For some years now, an explicit use of the term has also found its way into discussions at European level. One example is the work conducted by the EU-funded URBACT programme, a city network promoting sustainable development. In contrast to development aid, the working group of the LUMASEC project (Land Use Management for Sustainable European Cities) with its completely different framework conditions and initial situations, such as the differentiated institutional systems of spatial and environmental development, uses the term to mean the *process management of land use and development*. The focus is on *coordinat-*

ing the spatial, sector and temporal aspects. The different functions of land and related conflicts should be considered as part of sustainable land management (ENGELKE/VANCUTSEM 2010: 70).

The discussions mentioned draw explicitly and implicitly on statements made in scientific publications. Works by HURNI (2000) and HABER ET AL. (2010) are worth particular mention here. HURNI bases his deliberations on the target parameters of sustainable land management. This includes not only an integration perspective by linking ecological with socio-economic and political aspects, but also an intertemporal dimension taking account of intergenerational equity. In addition, HURNI'S approach is a "multi-stakeholder perspective", stressing the importance of considering a wide range of stakeholders in sustainable land management (HURN2000: 85). HABER ET AL see sustainable land management in the context of climate change, as well as a possible answer to reducing associated problems (HABER ET AL. 2010: 378). In order to implement objectives in connection with the issue of sustainability, they are based on a broad understanding of management which includes "technological, political and legal measures and activities" (HABER ET AL 2010: 379). In addition, reconfigurations of the instrument set are important in influencing land (HABER ET AL 2010: 378).

Few countries use the term, "sustainable land management", explicitly as part of national policies and programmes. In addition to the identically worded German research programme yet to be implemented, it is worth mentioning that both Australia and New Zealand formulate this as part of a government programme concerned with climate change. In Australia, an environmental protection perspective is of central importance, "sustainable land management means managing land without damaging ecological processes or reducing biological diversity"ⁱⁱ. In neighbouring New Zealand, the government has followed a "Sustainable Land Management Strategy" since 1996. The focus here is on the land users. They should be shown better ways to use the land employing cooperative control mechanisms, especially with regard to stakeholders from the service sector.ⁱⁱⁱ

In Germany, sustainable land management has been politically anchored alongside development support as a topic of the BMBF Framework Programme, "Research for Sustainable Development" (*Forschung für nachhaltige Entwicklungen*, FONA) since 2009. The following key aspects were identified as part of the "Sustainable Land Management" funding measure of which this discussion paper is also a part (BMBF 2008):

- Considering land use, land-use change, impact of land-use change and land-use decisions
- Considering complex interrelationships, interdependencies between land-use options (conflicts, synergies, etc.) and cross-sector action
- Regional approach (regional value-added networks, regional energy and material flows, considering urban/rural relationships)
- Interdisciplinary and cross-disciplinary project orientation
- Developing innovative concepts and strategies:
 - Innovative value-added networks to strengthen sustainable regional economic development
 - Technologies/methods and forecasting tools to make informed assessments of adaptation needs for land-use systems and the need for innovation
 - Services to promote sustainable land-use systems
 - Information and knowledge management in added-value networks, strengthening cooperation and communication among stakeholders

- Concepts for decentralized supply including renewable energies
- Resource-efficient and low-emission urban development
- Efficient and sustainable use of resources for production and energy generation
- Integrated use of land and water resources, paying special attention to regional supply and disposal services
- Adjusting land use and infrastructure facilities and associated services to allow for a sustainable attenuation of extreme events
- Adapting technical infrastructure systems whilst taking account of overlapping and multiple uses.

3. Interim conclusion

The lines of discussion mentioned include various dimensions that are important for sustainable land management. The following table lists these in an overview and outlines a very ambitious claim for the governance of land use. At the same time, it shows there is no fully coherent picture. Conflicts are to be expected, especially when fleshing out the content of the different dimensions.

Dimensions	
Subject area	
	Human/environment relations
	Land
	Land use
	Material and energy flows
	Regional added-value
	Land-use conflicts
Setting normative objectives	
	Sustainability
Relation to activities and impacts	
	Management/governance (especially coordination)
	Integration
	Conflict minimization, conflict resolution, synergies
	Complexity
	Transdisciplinarity
	Situational, structural and systemic aspects
	Change and innovation
	Information and knowledge
Spatial reference	
	Region
Time reference	
	Intergenerational equity
Stakeholder reference	
	Politics, administration, business, civil society, science
	Interdisciplinarity and transdisciplinarity
	Participation

Table1: Summary of the aspects shown; Own compilation (based on sources mentioned above)

"Sustainable land management" defined in this way cannot be seen as a static concept. Rather, it represents an approach to further develop existing conceptual ideas to influence land use (cf. GAASCH & WEITH 2011), some of which are developed evolutionary (e.g.

stakeholder reference, process design, the evaluation process), but in some cases also require innovative damage (e.g. in the governance of differentiated sector policies).

4. Discussions in the context of research

As indicated, depending on the definition of the term and its understanding in scientific discourse, various lines of discussion are indicative of sustainable land management. Without going into detail here, the authors recognise growing awareness of the issue. On the one hand, this is because of the development of explicitly scientific networks, such as the "Global Land Project", and also because publishers and journals are devoted to the topic, as the establishment of the magazine "land" shows. On the other hand, European or European-wide public funding have increased in this area (EU 7th Research Framework Programme, funding of the European Spatial Planning Observation Network ESPON, cooperation in ERA-Nets like WoodWisdom and RURAGRI).

Research initiatives and departmental research are particularly important for Germany since both support obtaining application-oriented knowledge and promoting implementation activities. In addition to the institutional and programme and project-based approaches by the German Research Foundation, the Leibniz Association, the Helmholtz Association, the Fraunhofer Society and the Max Planck Society, the activities of the BMBF are worth particular mention, which, in advance of the current funding measure, have considered and are still considering some aspects of sustainable land management. These are:

- Sustainable Forestry,
- REFINA (about governance of settlement and infrastructure development),
- Megacities,
- KLIMZUG (about climate change adaptation)
- and overall approaches as part of socio-ecological research.

There are also indications of new lines of discussion among professional societies, e.g. in surveying. A document by the International Federation of Géomètres (FIG) from 1999 emphasized that sustainable land use should be achieved on the basis of a variety of data about effective land management (FIG 1999). In the mean time, references have been made by surveyors to the explicit diversity of lines of discussion. "Others are doing land management too!" (MAGEL, 2006: 156).

5. Action fields for sustainable land management

The described lines of discussion show a high variety of political action fields that are of relevance to sustainable land management. At the same time, they point to the need for large-scale change processes setting framework conditions and new social challenges to adequately reflect content and procedures. Economic globalisation, climate change, global food security, biodiversity, water supply, migration, demographic change processes, and the world's growing energy needs are key here. They lead to changes in land use in almost all major regions (WBGU 2011, FÜRST & MÄDING 2011).

The energy transition has established different demands on spatial use, particularly in Germany. In addition to the space required, e.g. for wind energy or photovoltaic systems, significant areas need to be established for infrastructure development, both for transmission routes and for new decentralised system types. At the same time, new priorities are being set within existing types of land use, such as agriculture, and e.g. the cultivation of food is being replaced by the cultivation of energy crops.

It should also be noted that a considerable number of land-use changes leading to land-use conflicts have been discussed politically and scientifically for decades. It is worth mentioning, in particular, the processes of land use for housing and transport purposes in the context of complex urbanization and suburbanization, and more urban/rural interactions (see REPP ET AL, 2012).

This leads, in part, to new and old rivalries between different land-use claims. A differentiation should be made between arising (1) conflicts *between* types of land use (e.g. agriculture versus development and infrastructure) and (2) conflicts *within* one type of land use (agricultural food production versus energy crops). In Germany these developments run, in part, parallel to processes of regional differentiation between growing versus shrinking regions with an increase in spatial disparities.

6. Current policies relating to sustainable land management

The above statements show that sustainable land management concerns itself with key societal challenges and, at the same time, also discusses, at least part, required changes to current policies. What specific policies might this affect? In line with the character of this article, a first overview should be made of current political activities which reflect or flesh out important land-use related content. According to the focus of the core content of the module, "Innovative System Solutions" (Module B) of the described funding measure, this will be limited to the European dimension and the strategic-instrumental debate in Germany embedded therein. All forms of land use (particularly settlement, infrastructure, open space with agriculture and forestry, nature conservation, water) are addressed here.

6.1 EU policies

At first glance, the term "sustainable land management" currently plays no important role in core EU policy agendas. This applies to the Lisbon Agenda^{iv}, the sustainability strategy/Gothenburg Strategy^v, and its revised version from 2006 (COUNCIL OF THE EUROPEAN UNION, 2006b), the Territorial Agenda/Leipzig Charta - Towards a More Competitive and Sustainable Europe of Diverse Regions (BMVBS 2007) and the Europe 2020 Strategy: A strategy for smart, sustainable and inclusive growth (EUROPEAN COMMISSION 2010). However, both the Gothenburg Strategy and the Territorial Agenda/Leipzig Charta address some significant aspects of sustainable land management. Consequently, terms such as *sustainable forest management*, *sustainable resource management*, *coastal zone management* and *risk management* are used in the revised EU Sustainable Development Strategy.

The aspects of sustainable land management play a very important role in specific land use-related EU policies. In accordance with the responsibilities of the Directorates-General, the activities of regional policy, environmental policy, agriculture, rural development and maritime policy are worth mentioning explicitly.

Regional policy includes the action fields of sustainable infrastructure development, eco-innovation, implementation and reuse of brownfields, reduction of urban sprawl, and protection against natural hazards (see COUNCIL OF THE EUROPEAN UNION, 2006a). For the Environment Directorate-General, in addition to activities on climate policy, and, in particular, the introduction of Impact Assessment Tools (EIA/SEA), reference should be made to the ongoing discussion about the "Soil Framework Directive" (EUROPEAN COMMISSION, 2006a) and the "Roadmap to a resource efficient Europe" (EUROPEAN COMMISSION, 2011) from 2011.

Another important field of work is the international network of nature protection areas, NATURA 2000.^{vi}

In agricultural policy, new regulations were recently adopted for managing agricultural areas (i.a. for greening). Cross-compliance obligations and payments for ecosystem services have been in existence for some time. Also aspects of process management, such as the LEADER approach should be mentioned here, which provides strong local commitment and bottom-up initiatives as the basis for regional development. The objective of the EU's Forestry Strategy from 1998 was sustainable forestry. It includes the elements of multi-functionality, an increased use of wood and non-forest products and the development of rural areas (Council of the European Union 1999). The EU Forest Action plan (2007-2011) calls for the management, protection and sustainable development of all types of forests and it supports long-term development prospects. Dialogue processes at all levels play a central role in this (EUROPEAN COMMISSION, 2006B). The European forest policy reflects international lines of discussion for sustainable forest management which is represented, for example, by the International Forest Panel at the UN. Activities to store CO₂ as part of the implementation of REDD+ strategies are becoming increasingly important here.^{vii}

6.2 Action approaches in Germany

The adoption of the Sustainable Development Strategy 2002 (GERMAN FEDERAL GOVERNMENT, 2002) marked a new cross-sectional policy approach on the part of German federal policy which also included aspects of sustainable land management. As a result, in the *quality of life* section, the formulation "Maintaining a vibrant city - developing rural areas" was included as an aspect of its guiding principle. The indicators mentioned here include *resource conservation, land utilization, climate change, renewable energies, biodiversity, mobility and nutrition*.

The political significance of this federal policy approach, which also continues diverse policies that have been pursued for decades, was already clearly demonstrated a year earlier by the establishment of a Council for Sustainable Development in the German Federal Government and was afforded further political and social import by the establishment of the State Secretaries' Committee on Sustainable Development. In particular, the Council for Sustainable Development promotes discourse on sustainability objectives and processes and thereby contributes to a constant presence of the topic in public debate.

Meanwhile, there are many reports on the state of sustainable development. An overview of core sustainability indicators are, for example, periodically listed in the Progress Report of the Federal Government along with an assessment of their development. The Progress Report of 2012 (GERMAN FEDERAL GOVERNMENT, 2012) points out some areas still requiring considerable change and action for today's most important land-management indicators, such as *land utilization, biodiversity, landscape quality and land management*.

In addition to this approach, some aspects of sustainable land management, now with a close interdependence on European discussions, have been part of various policy fields of action for decades.^{viii}

Particularly important in the authors' view are^{ix}:

- Regional spatial planning, with the basic objective of sustainable spatial development, diverse content and procedural components and currently with a wide variety of approaches for adapting to climate change
- Urban development, with the sub-aspects

- Plans (particularly land-use plans and development plans)
- Site management and recycling (reduction of land utilization)
- Informal concepts/re-urbanization processes
- Environmental planning, with its statutory legal definition and various implementation forms (landscape planning, strategic and project-specific environmental impact assessment, (major) nature conservation projects)
- Agricultural policy, with the sub-sections
 - Land cultivation, i.e. agricultural policy with cross-compliance and greening
 - System of property ownership/land consolidation/soil management^x with approaches for the necessary segregation of usages (intensively managed versus extensively/non-managed areas)
- Forest policy with continued discussion about agricultural and forestry management tools to include more aspects of biodiversity and forest management, multi-functionality and the integration of regional economic aspects^{xi}
- Water management with its content and procedural realignment after the adoption of the European Water Framework Directive.

7. Particular challenges for sustainable land management

Assuming the existing policies, structures and dynamics of land use can not be called sustainable and that changes in land management towards *sustainability* can be, at least generally, interpreted as a rational problem-solving process, in the view of the authors, there are special challenges in steps to *define the problem* and in *alternative developments* and their *governance-related implementation*.

7.1 Problems and problem diversity

Current and future land uses are influenced by a variety of factors. They range, as outlined, from global developments such as climate change, water shortages or the loss of biodiversity, to local influencing factors such as individual entrepreneurial decisions. In the scientific context, only partial correlations and clear cause/effect relationships, in particular, have been analysed to date. This becomes particularly evident in the area of demographic change. Only limited direct interdependencies have been established here so far (BEHRENS ET AL, 2012).

If an explicitly transdisciplinary approach is pursued in land management, variety of perceptions of problems will grow bigger. But not all stakeholders have the same resources to position their views, like influential lobby groups will do (e.g. agriculture, food industry, landowners, etc.). Simultaneously, the formulated problems are also often subjected to a dynamic process of change and adaptation, so that recursive problem formulation processes should be implemented repeatedly.

7.2 Control and management: diversity of options

Difficulties in problem analysis and assessment subsequently lead to open questions regarding the possible need for necessary changes and opportunities for influencing forms of land use. In addition, there are a large number of control tools (planning, financial incentives, information systems, etc.), whose affect is often only partially known due to a lack of evaluation results. At the same time, these management approaches influence each other so unintended interactions occur. In part, the policies contradict each other. As a result, spatial planning over many years tries to reduce suburbanization processes supported by economic incentives (promotion of home ownership, commuting allowances etc.). In this context,

"innovative" approaches should come into play, i.e. change existing tools to further increase the complexity of assessing possible consequences.

With a view on the cross-disciplinary focus, it is significant that, in addition to the variety of existing management instruments mentioned, the full involvement of the different rationales of the stakeholders (politics, administration, business, civil society) must be taken into account.

8. Approaches of joint projects in the "Innovative system solutions for sustainable land management" module (Module B)

The joint projects promoted as part of the Sustainable Land Management funding measure in Module B have each found independent ways of developing solutions in the key areas they deal with (energy and land use, water and land use, etc.). An initial evaluation of project activities shows many differences and similarities between the enforced eligibility criteria that could serve as initial evidence of further development of the term "sustainable land management" (see also WEITH ET AL, 2010.)

- The early and simultaneous involvement of politicians, the government, business representatives and civil society
- The combination of different thematic fields of action, such as water management, the restoration of wetlands and biomass production
- The linking of governance of flows and governance of space and place, such as combining water management, fuel wood production and the protection of open spaces
- The combination of several strategic action principles, such as resource efficiency, adaptation and energy/material cascade utilization
- Combination instruments, such as linking regional planning and economic incentives with modelling and evaluating project-related impacts.

The further progress of the project and, in particular, the findings gained in the cross-disciplinary context promise continuative results.

9. Outlook

Discussions conducted as part of the described funding measure and beyond about changing problems and the need for action in the context of "land management" still highlight some "blind spots", in the authors' view. Although a wide range of issues and approaches are discussed and further developed, the following issues remain ignored up to now:

- An up-to-date political and, in particular, ethical debate about equitable land use in the context of developed countries (generational equity, distributive equity) which has a long tradition in the old German Federal Republic (e.g. social obligation of property)
- The interrelations and impacts between local and global changes in land use, as reflected in discussions about footprints (see WACKERNAGEL, 1994)
- The inclusion of the discussion about systemic risks, which in the context of the discussion about GMOs or the financial crisis, has lead to important impulses for better understanding of and dealing with the challenges (see WBGU, 1999)
- The discussion about new forms of transfer (e.g. via social networks; see ZSCHEISCHLER ET AL, 2012) and new forms of stabilizing launched initiatives, such as the efficiency of an early and targeted involvement of civil society stakeholders.

The authors believe the term "sustainable land management" also needs to be further developed, not only to provide an overview of sources, but to increasingly involve the practical experience of individuals and groups. This could provide more information about the action orientations realised in practice.

Endnotes

- ⁱ This paper includes parts of an article published in a former version in the Discussion paper Weith et al. 2013 in German language.
- ⁱⁱ Australian Government – Department of Sustainability, Environment, Water, Population and Communities (2009): <http://www.environment.gov.au/land/management/index.html> (accessed: 26 February 2013).
- ⁱⁱⁱ New Zealand – Ministry for the Environment (2010): <http://www.mfe.govt.nz/issues/land/soil/strategy.html> (accessed: 27 March 2013).
- ^{iv} EUROPEAN COUNCIL, 23 and 24 March 2000: http://www.europarl.europa.eu/summits/lis1_de.htm (accessed: 8 February 2013).
- ^v EUROPEAN COUNCIL, 15/16 June 2001: http://ec.europa.eu/agriculture/envir/cap/index_de.htm (accessed: 8 February 2013).
- ^{vi} EUROPEAN COMMISSION 2013: <http://ec.europa.eu/environment/nature/natura2000/> (accessed: 8 February 2013).
- ^{vii} UN UNITED NATIONS (o.J.): About REDD+: <http://www.un-redd.org/AboutREDD/tabid/102614/Default.aspx> (accessed: 11 March 2013).
- ^{viii} An explicit analysis and evaluation is desirable, particularly in conjunction with ongoing joint projects.
- ^{ix} The federal government, *Länder*, regions, local government and individual organizations/businesses are seen as main stakeholders.
- ^x The Centre of Land, Water and Environmental Risk Management at the Technical University of Munich (2013): <http://www.landentwicklung-muenchen.de/> (accessed: 19 March 2013).
- ^{xi} J. BAUHUS, What can modern silviculture do? (2010) Paper presented at the "Waldstrategie 2020" conference on 19 and 20 April 2010 in Berlin: <http://www.fnr.de/waldstrategie/> (accessed: 19 March 2013).

References

- Behrens, H.; Dehne, P.; Hoffmann, J. (2012): Demographische Entwicklung und Landnutzung. Münchenberg
- Benz, A. (2003): Regional Governance mit organisatorischem Kern. Das Beispiel der Region Stuttgart, Informationen zur Raumentwicklung, 2003, No. 8/9, pp. 505-512
- Biesecker, A.; Hofmeister, S. (2006): Die Neuerfindung des Ökonomischen. Ein (re)produktionstheoretischer Beitrag zur sozial-ökologischen Forschung. München
- BMBF Bundesministerium für Bildung und Forschung (2008): Bekanntmachung des Bundesministeriums für Bildung und Forschung von Richtlinien über die Fördermaßnahme „Nachhaltiges Landmanagement“ vom 24. Oktober 2008. Online <http://www.bmbf.de/foerderungen/13138.php> (19.12.2011)
- BMVBS Bundesministerium für Verkehr, Bau und Stadtentwicklung (2007): Territoriale Agenda der Europäischen Union. Für ein wettbewerbsfähigeres nachhaltiges Europa der vielfältigen Regionen. Online <http://www.bmvbs.de/cae/servlet/contentblob/29700/publicationFile/2620/territoriale-agenda-der-europaeischen-union-angenommen-am-25-mai-2007.pdf> (14.03.2013)
- Burns, T. R. (2006): The sociology of complex systems: An overview of Actor-Systems-Dynamics-Theory, World Futures (62), pp. 411-440
- Carlowitz, H.C. von; Hamberger, J. (Hrsg.) (2013): Sylvicultura oeconomica oder Haußwirthliche Nachricht und Naturmäßige Anweisung zur Wilden Baum-Zucht, München
- Davy, B. (2012): Land policy: planning and the spatial consequences of property, Farnham
- Die Bundesregierung (2002): Perspektiven für Deutschland. Unsere Strategie für eine nachhaltige Entwicklung. Online http://www.bundesregierung.de/Content/DE/_Anlagen/Nachhaltigkeit-wiederhergestellt/perspektiven-fuer-deutschland-langfassung.pdf;jsessionid=4711B6D6178CF7C94DA7DFB4512B0FB2.s1t2?__blob=publicationFile&v=2 (07.03.2013)

- Die Bundesregierung (2012): Nationale Nachhaltigkeitsstrategie. Fortschrittsbericht 2012, Berlin
- Engelke, D.; Vancutsem, D. (2010): Sustainable Land Use management in Europe. Providing strategies and tools for decision-makers, Lyon
- Europäische Kommission (2006A): Proposal for a Directive of the European Parliament and of the Council. Establishing a framework for the protection of soil and amending Directive. Online <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0232:FIN:EN:PDF> (14.03.2013)
- Europäische Kommission (2006B): EU Forest Action Plan. Online http://ec.europa.eu/agriculture/fore/action_plan/com_en.pdf (07.03.2013)
- Europäische Kommission (2010): Eine Strategie für intelligentes, nachhaltiges und integratives Wachstum. Online http://ec.europa.eu/archives/growthandjobs_2009/pdf/complet_de.pdf (14.03.2013)
- Europäische Kommission (2011): Roadmap to a Resource Efficient Europe. Online http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf (14.03.2013)
- FIG Fédération Internationale des Géomètres (1999): The Bathurst Declaration on Land Administration for Sustainable Development. Online <http://www.fig.net/pub/figpub/pub21/figpub21.htm> (28.03.2013)
- Fürst, D.; Mäding, H. (2011): Raumplanung unter veränderten Verhältnissen, Akademie für Raumforschung und Landesplanung (Ed.): Grundriss der Raumordnung, Hannover, pp. 11-68
- Gaasch, N.; Weith, Th. (2011): Vom Flächenmanagement zum Landmanagement, Planerin 2/11, pp. 8-10
- Grunewald K.; Bastian O. (Hrsg.) (2013): Ökosystemdienstleistungen - Konzept, Methoden und Fallbeispiele, Heidelberg.
- Haber, W. et al. (2010): Anpassung des Landmanagements in Europa an den Klimawandel, Natur und Recht (32), pp. 377-383
- Hofmeister, S.; Hübler, K. (1990): Stoff- und Energiebilanzen als Instrument der räumlichen Planung, Hannover
- Hurni, H. (2000): Assessing sustainable land management (SLM), Agriculture, Ecosystems and Environment (81), pp. 83-92
- Jörissen (2005): Konzepte von Nachhaltigkeit im Vergleich: Grundlinien, Konfliktpunkte, Weichenstellungen. In: Rink, D.; Hartmuth, G.; Huber, K. (Ed.): Raum für Nachhaltigkeit: Zur Kontextualisierung des Leitbilds, Berlin, pp. 11-35
- Klein, J. et al. (2001): Transdisciplinarity: Joint Problem Solving among Science, Technology and Society – An effective way for managing complexity, Basel
- Magel, H. (2006): Landmanagement – das rätselhafte Wesen? Deutsche Betrachtungen aus internationaler Sicht. In: Flächenmanagement und Bodenordnung (fub), 68,4/2006, pp. 154-158
- Rat der Europäischen Union (1999): Entschließung des Rates vom 15. Dezember 1998 über eine Forststrategie für die Europäische Union. Online <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:1999:056:0001:0004:DE:PDF> (08.03.2013)
- Rat der Europäischen Union (2006a): Entscheidung des Rates vom 6. Oktober 2006 über strategische Kohäsionsleitlinien der Gemeinschaft. Online http://ec.europa.eu/regional_policy/sources/docoffic/2007/osc/l_29120061021de00110032.pdf (07.03.2013)
- Rat der Europäischen Union (2006b): Renewed EU Sustainable Development Strategy. Online: <http://register.consilium.europa.eu/pdf/en/06/st10/st10117.en06.pdf> (27.03.2013)
- Repp, A.; Zscheischler, J.; Weith, Th.; Strauß, C.; Gaasch, N.; Müller, K. (2012): Urban-rurale Verflechtungen. Analytische Zugänge und Governance-Diskurs. Diskussionspapier Nr. 4, Online <http://z2.zalf.de/oa/930b05b6-ec15-4900-a7b0-0c572a8e191c.pdf> (02.04.2013)
- Smyth, A.J. et al. (1993): An international framework for evaluating sustainable land management. Online <http://www.mpl.ird.fr/crea/taller-colombia/FAO/AGLL/pdfdocs/feslm.pdf> (19.09.2012)
- Staehele, W. H. (1999): Management. Eine verhaltenswissenschaftliche Perspektive, München
- UN United Nations (1996): Land administration guidelines, New York/Genf, Online <http://www.unece.org/fileadmin/DAM/hlm/documents/Publications/land.administration.guidelines.e.pdf> (04.03.2013)..

Wackernagel, M. (1994): Ecological footprint and appropriated carrying capacity. A tool for planning toward sustainability, Vancouver.

WBGU Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (1999): Welt im Wandel: Erhaltung und nachhaltige Nutzung der Biosphäre. Jahresgutachten, Berlin / Heidelberg / New York,

WBGU Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (2011): Welt im Wandel – Gesellschaftsvertrag für eine Große Transformation, Berlin / Heidelberg / New York

WCED World Commission on Environment and Development (1987): Report of the World Commission on Environment and Development: Our Common Future. Online <http://www.un-documents.net/our-common-future.pdf> (26.03.2013)

Weith, Th., Besendörfer, C., Gaasch, N., Kaiser, D.B., Müller, K., Repp, A., Rogga, S., Strauß, C., Zscheischler, J. (2013): Nachhaltiges Landmanagement: Was ist das? Diskussionspapier Nr. 7, Münchenberg Weith, Th.; Gaasch, N.; Schulz, K.; Zscheischler, J. (2010): Sustainable land management: new ways towards regional environmental governance? Full paper Berlin Conference on the Human Dimensions of Global Environmental Change 2010 in Berlin. Online http://edocs.fu-berlin.de/docs/servlets/MCRFileNodeServlet/FUDOCs_derivate_000000001380/Weith-Sustainable_land_management-311.pdf?hosts=local (04.03.2013)

Wolman, A. (1965): The Metabolism of Cities, *Scientific American* 213 (3), pp. 178-193

World Bank (2008): Sustainable Land Management. Sourcebook, Washington DC

Zscheischler J.; Weith, Th.; Gaasch, N.; Strauß, C.; Steinmar, R. (2012): Nachhaltiges Landmanagement – eine kommunikative Herausforderung. In: *Flächenmanagement und Bodenordnung (fub)*, 5/2012, pp.211-218

Are we all neoliberals now? Urban planning in a neoliberal era

Ian WRIGHT, Partner | Planning Government Infrastructure and Environment | Herbert Geer, Australia

ABSTRACT

The modernist perspective of planning is concerned with making public and political decisions in respect of the planning of our places more rationally and consistent with an overarching public interest.

However the modernist perspective of rational planning action has been challenged by a postmodernist perspective of pragmatic planning, and more recently, by a neoliberal perspective rooted in the economic and political conditions of Milton Friedman's monetarism and Friedrich Hayek's classical liberalism.

This paper considers the ideology of neoliberalism in the context of the competing ideologies of postmodernism and modernism to identify the following:

- > an urban change model which identifies the relationships between urban change, ideology, planning theory and planning models;*
- > the cultural, social, economic and political conditions of neoliberalism;*
- > the broad policy setting of a neoliberal government;*
- > the key features of the neoliberal strategic management planning model which is used by neoliberal governments;*
- > the key features of planning practice arising from the use of the neoliberal strategic managerial planning model;*
- > the role of urban planners in a neoliberal state.*

The paper concludes that the neoliberal project is contestable and suggests that the adoption of collaborative planning processes and evidence based strategic management planning offers the opportunity for planners to reassert their professional status, rebuild the trust of the public and politicians and lift the planning profession out of its current malaise.

INTRODUCTION

Neoliberalism = Classical liberalism + (Theory of growth + Keynesianism)

"In one sense, we are all Keynesians now. In another nobody is any longer a Keynesian". (Milton Friedman, Time Magazine, February 4, 1966)

With these words in 1966, Milton Friedman the leading conservative economist of his generation, announced the passing of post war Keynesianism and the birth of neoliberal economics.

Whereas Keynes was concerned with achieving prosperity and stability from the depression and war scarred world of the 1930s and 1940s; Friedman was focussed on growing the already prosperous world of the 1950s and 1960s.

Friedman's neoliberal economics was an extension of the classical theory of growth which built upon but supplanted Keynesianism. As Keynes might have put it; Theory of growth + Keynesianism = Neoliberal economics (*Time Magazine, December 31, 1965*).

Friedman's neoliberal economics also built upon Friedrich Hayek's political philosophy of classical liberalism which espoused limited government, individual freedom and the rule of law.

The socio-economic and political conditions resulting from the fusion of monetarism and classical liberalism is known as neoliberalism.

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

Neoliberalism is an ideology that involves a commitment to the rolling back of the Keynesian-welfare state's collectivist institutions and the ethos of universal provision and the rolling out of market mechanisms and competitiveness to achieve economic growth (Peck and Ticknell 2002:384; McGuirk 2005:61).

Waves of neoliberalism

Neoliberalism should not be seen as an end state or condition but rather as a process of changing the relationship between the public sector, private sector and civil society to facilitate economic growth.

Neoliberalism has advanced across the world in a series of four waves with Australia at the vanguard of each wave as summarised in Table 1.

- > The rollback of Keynesianism in Australia under the rubric of economic rationalisation was commenced by the Fraser government in the 1970s and 1980s which preceded both Thatcherism in the United Kingdom and Reganism in the United States.
- > The moderation of the rollback of Keynesianism under the Hawke and Keating governments in the 1980s and 1990s also preceded the Third Wave governments of Blair and Brown in the United Kingdom and Clinton in the United States.
- > The roll out of neoliberalism under the Howard government in the 1990s and 2000s also preceded both the Bush presidency in the United States and the Cameron prime ministership in the United Kingdom.
- > Finally, the moderation of the roll out of neoliberalism in Australia under the Rudd and Gillard governments since 2007 has preceded similar efforts under the Obama administration in the United States.

Table 1 Neoliberal waves

Australia	United States	United Kingdom
First wave (1970s to 1990s) - Neoliberalism roll back		
Economic rationalism - Fraser Liberal National Party governments (1975 - 1983)	Reganism - Regan and Bush Snr Republican governments (1980 - 1992)	Thatcherism - Thatcher and Major Conservative governments (1979 - 1997)
Second wave (1980s to 2010) - Neoliberalism roll back moderated (Third Way)		
Hawke and Keating Labor governments (1983 - 1996)	Clinton Democrat government (1992 - 2000)	Blair and Brown Labour governments (1997 - 2010)
Third wave (late 1990s to current) - Neoliberalism roll out		
Howard Liberal National Party government (1996 - 2007)	Ownership society - Bush Jnr Republican government (2000 - 2008)	Big society - Cameron and Clegg Conservative / Liberal Democrat government (2010 - onwards)
Fourth wave (late 2000s to current) - Neoliberalism roll out moderated		
Rudd and Gillard Labor governments (2007 - onwards)	Obama Democrat government (2008 - onwards)	?

However the moderation of neoliberalism arising from the Global Financial Crisis and the resulting Great Recession / Stagnation has not lead, as Prime Minister Kevin Rudd had predicted in 2009, to the death of neoliberalism, and its replacement by social-democratic capitalism; which Rudd described as "a system of open markets regulated by an activist state

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

and one in which the state intervenes to reduce the great inequalities that competitive markets will inevitably generate" (Rudd 2009).

Since 2009 Australians have elected neoliberal governments in most states and territories and if opinion polls are to be believed will elect a neoliberal Commonwealth government.

The reports of the death of neoliberalism therefore appear to be exaggerated; as are the claims that "*we are all Keynesians now*" (Rudd 2009). Indeed, the history of the last 50 years would indicate a jump to the right with only small steps to the left.

Urban planning in a neoliberal era

The neoliberal dominance has significant implications for urban planning. From a neoliberal perspective, much of urban planning is seen as distorting land markets and increasing transaction costs through bureaucratisation of the urban economy; which should be rolled back by contracting the domain of planning (deregulation) and then privatising segments of the residual sphere of regulation (outsourcing) (Gleeson and Low 2000b:10).

As a result the *raison d'être* of planning as a tool of correcting and avoiding market failure is dismissed; and planning is subsumed as a minimalist form of spatial regulation to provide certainty to the market and facilitate economic growth.

Ideology, theory, policy and practice

Whilst it is unclear how ideology influences planning theory and in turn how planning theory effects planning practice, a consideration of ideology and planning theory does provide a basis for understanding how planning policy and practice may evolve as a result of a neoliberal planning reform agenda.

As Forester (1989:12) observes:

"Theories can help alert us to problems, point us towards strategies of response, remind us of what we care about, or prompt our practical insights into the particular cases we confront".

Themes of paper

This paper has 6 themes:

- > First, it establishes a model of urban change; a model that seeks to show the relationship of ideologies, planning theories and planning models to the components of urban change and the institutions responsible for that change.
- > Second, it seeks to flesh out the cultural, socio-economic and political conditions of neoliberalism in the context of the competing ideologies of postmodernism, modernism and premodernism; to provide an ideological context to both the broad policy settings of a neoliberal government and the use of planning theory in a neoliberal state.
- > Third, it seeks to flesh out the debate on planning theory to provide a theoretical context for the consideration of the neoliberal strategic management planning model in the context of the competing postmodernist collaborative planning model.
- > Fourth, it discusses the key characteristics of the neoliberal strategic management planning model to provide context for the consideration of the potential implications in planning practice from the use of this model.
- > Fifth, it seeks to identify the planning policy outcomes which are likely to be associated with a neoliberal government, to provide context to the potential scope of future urban planning reform in a neoliberal state.
- > Finally, it discusses the role of the urban planner in a neoliberal regime and provides a suggested path out of the malaise that currently afflicts the planning profession in Australia.

URBAN CHANGE MODEL

Components and institutions of urban change

Urban change occurs as a result of the interplay of three institutional components (Newman 2000:1):

- > the market represented by the private sector;
- > the government represented by the public sector; and
- > the community comprising a civil society (the so called third sector).

The characteristics of the institutional components and associated institutions of urban change are summarised in Table 2.

Table 2 Components and institutions of urban change

Market – private sector	Government – public sector	Civil society – third sector
Institutional stakeholders		
Consumers, producers, employers, employees, trade associations and unions	National, state and local government including public sector entities	Communities including media, churches, educational bodies, associations and community groups
Institutional role		
Provision of wealth for development	Protection of rights and public realm	Guardian of culture and ethics
Institutional outputs		
Goods and services	Laws and regulations; infrastructure and services	Values and vision
Institutional focus		
Focussed on an aggregated criteria of choice based on the notions of utility or satisfaction	Focussed on an overall idea such as 'the spirit of history' or the 'essence of society'	Focussed on the society (modernist) or societal groups (postmodernist) as the first ethical subject and consequently on a common conception of the common good of the society (modernist) or a societal group's conception of good (postmodernist)
Institutional horizons		
Short term	Medium term (based on the term of office)	Long term

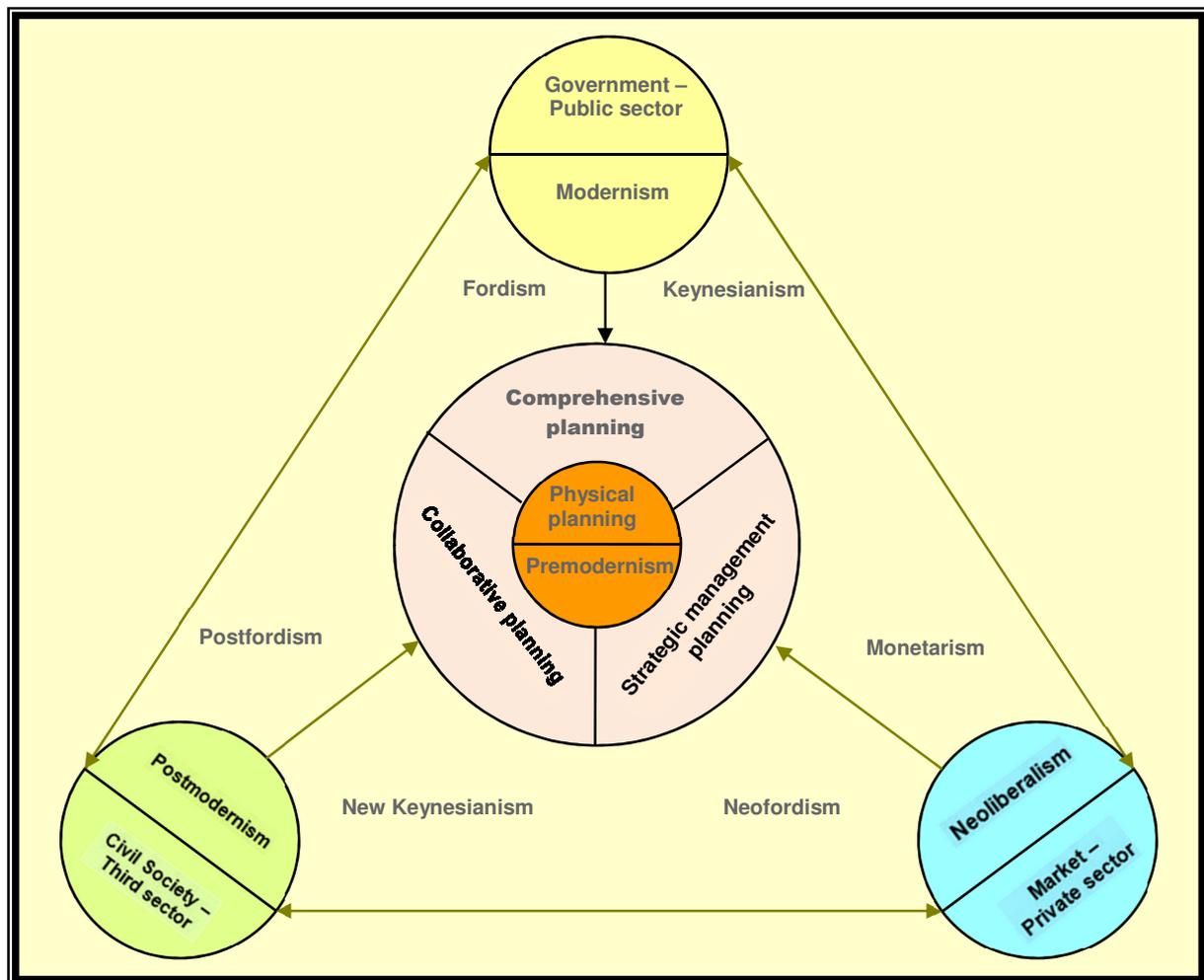
Source: Newman 2000:2; Moroni 2004:155; Alexander, Mazza & Moroni 2012:75

Planners influence all components of urban change; the market, government and civil society. They work through the private, public and third sectors using a collection of planning theories and practices to influence urban change; or on some occasions to prevent urban change.

Relationship of planning theory and practice to urban change

The interrelationship between the planning theories and practices used by planners and the components and institutions of urban change is shown in Figure 1.

Figure 1 Urban change model



It is clear that planning and the capacity to effect urban change is critically influenced by planning theory and practice; although the extent of this influence is not well understood.

An understanding of planning theory requires it to be placed within the context of broader cultural, socio-economic and political change; being the historic shift from premodernism to modernism, and then to postmodernism and more recently to neoliberalism.

Neoliberalism in a historic context

The broad cultural, socio-economic and political changes that have influenced western societies such as Australia, have had a profound effect on planning theory and practice.

These changes exist in a historic century-long linear process of transition from premodernism, to modernism, to postmodernism and finally to neoliberalism.

The cultural, socio-economic and political conditions of modern, postmodern and neoliberal ideologies are summarised in Table 3.

Table 3 Cultural, socio-economic and political conditions

Modern	Postmodern	Neoliberal
Period or era		
<i>Modernity</i> – The period of modern thought from the Enlightenment to the present	<i>Postmodernity</i> – The period of postmodern thought from the 1960s to the present	<i>Late capitalism</i> – The period of neoliberal thought from the mid 1970s to the present

Modern	Postmodern	Neoliberal
Political conditions		
<p><i>Social democracy</i> – The political conditions involving:</p> <ul style="list-style-type: none"> • a universal society existing as a structure • the collective good of the society • welfare services that are delivered to ensure equality of opportunity and removal of differences within society 	<p><i>Social liberal (deliberative) democracy (Third way)</i> – The political conditions involving:</p> <ul style="list-style-type: none"> • multiple societal groups existing as networks and flows • the good of each societal group • welfare services that are delivered to ensure personalised integrated services to reflect the differences within society 	<p><i>Liberal democracy (New Right, Thatcherism, Reaganism)</i> – The political conditions involving:</p> <ul style="list-style-type: none"> • individuals; there being no society or societal groups • the good of the individual • welfare services that are delivered by the market with limited targeted welfare services
Cultural conditions		
<p><i>Modernism</i> – The cultural conditions which accompany a method of thought in which human reason is able to identify objectively existent and knowable laws of reality that can be used to effect change to achieve a unitary common public good or truth (Hirt 2002:3)</p>	<p><i>Postmodernism</i> – The cultural conditions which accompany a method of thought in which human reason is able to identify the subjectively constructed views of groups that can be used to effect change to achieve a good as defined by those groups</p>	<p><i>Neoliberalism</i> – This economic theory has little to say about the cultural conditions of society</p>
Social conditions		
<p><i>Fordism</i> – The social conditions which accompany industrial mass production using repetition and simplicity of standardised products for mass consumption by a mass market (Goodchild 1990:126)</p>	<p><i>Postfordism</i> – The social conditions which accompany flexible small batch production of specialised products for consumption by different groups in niche markets (Goodchild 1990:126)</p>	<p><i>Neofordism</i> – The social conditions which accompany the provision of services using information technologies to niche markets that predominates over declining industrial and manufacturing activities</p>
Economic conditions		
<p><i>Fiscalism (Keynesianism, Welfarism)</i> – The economic conditions of a mixed economy involving predominately the private sector but also a significant role for the public sector in terms of monetary policy by central banks and fiscal policy by governments to stabilise output over the economic cycle</p>	<p><i>New Keynesianism</i> – The economic conditions of a market economy involving the private sector where the role of the public sector is limited to macro-economic stability, investment in infrastructure and education, containing inequality and guaranteeing opportunities for self-realisation (Giddens 2000:164)</p>	<p><i>Monetarism</i> – The economic conditions of a market economy involving the private sector where the role of the public sector is limited to monetary policy by central banks</p>

Neoliberal cultural, socio-economic and political conditions

In the context of a consideration of the planning reform agenda it is important to understand the potential cultural, socio-economic and political conditions of a neoliberal state:

- > *Cultural conditions* – Neoliberalism has little to say about the cultural conditions of society as it is a theory derived from economics.

- > *Social conditions* – Neoliberalism is premised on the social conditions of a services based economy where the provision of services using information technologies to niche markets predominates over declining industrial and manufacturing activities (the so called deindustrialisation of western societies).
- > *Economic conditions* – Neoliberalism is premised on the economic conditions of a market based economy involving the private sector; where the role of the public sector is limited to monetary policy by central banks. Neoliberalism rejects the use of fiscal policy by government to stabilise output over the economic cycle.
- > *Political conditions* – Neoliberalism is also premised on the political conditions of a liberal democracy which involves the following:
 - individuals who have the right to pursue a good life that does not harm others;
 - services that are delivered by the market or subject to competitiveness;
 - a limited role for the government in providing information and guidelines; as well as targeted welfare services for areas of social exclusion.

These broad socio-economic and political conditions provide the ideological context which will influence the broad policy settings of a neoliberal government.

NEOLIBERAL POLICY SETTINGS

The broad policy settings which are generally associated with modern, postmodern and neoliberal ideology are summarised in Table 4.

Table 4 Policy settings

Modern	Postmodern	Neoliberal
Government function		
Big centralised government involving political-administrative control	Smaller but better integrated centralised government where political-administrative control is maintained	Decentralisation Depoliticalisation Agencification
Government policy focus		
Social policy focus to ensure social cohesion	Social policy focussed on social exclusion and economic policy focused on full employment and planning	Liberalisation
Government economic management		
High taxes and spending	Lower but better targeted taxes Spending on social exclusion areas	Financialisation Fiscal conservatism
Government regulation		
Regulation	Regulation to address areas of social exclusion	Deregulation

Modern	Postmodern	Neoliberal
Central and local government relationship		
Central and local governments address the public interest	Central and local governments address group interests, in particular areas of social exclusion Local governments are well funded but are also more accountable to central government	Growthism Entrepreneurialism
Government and private sector relationship		
Government provision, commercialisation and corporatisation	Public-private partnerships Reliance on volunteer and faith based institutions	Marketisation Privatism
Government and civil society relationship		
Government help for citizens	Community self-help Government help for areas of social exclusion	Individualism Individual self-reliance and entrepreneurship Clientelism / consumerism

Source: Jackson 2009:405; Robinson 2011:1100

In the context of neoliberal ideology the following broad policy settings are likely to be adopted by a neoliberal government:

- > *Decentralisation* - Neoliberal governments tend to favour small central governments with decision making and implementation being delegated vertically to international governance (internationalism) and down to regional governance (regionalism) and local governments (localism) and horizontally to private sector and civil society partnerships and networks. Central governments seek to either steer (but not row) or direct (but not implement).
- > *Depoliticisation* - Neoliberal governments favour tools, mechanisms and institutions to separate political and administrative functions so that an issue, policy field or decision is no longer the responsibility of politicians in order to remove the political character of decision making (Flinders and Butler 2006: 296).
- > *Agencification* - Neoliberal governments favour structural disaggregation of integrated administrative structures into single purpose task specific semi-independent agencies (Sager 2009:69).
- > *Liberalisation* - Neoliberal governments tend to focus more on economic policy directed to competition and innovation rather than on social and environmental policy.
- > *Financialisation* - Neoliberal governments tend to favour financial markets and institutions having a greater influence over economic policy.
- > *Fiscal conservatism* - Neoliberal governments tend to favour lower taxes to increase consumer choice, lower spending (austerity) and a user pays approach.
- > *Deregulation* - Neoliberal governments tend to focus on market led development with lesser regulation in terms of rules, processes and internal considerations like expert jurisdictions and job security to reduce the role of government (Sager 2009:70).
- > *Growthism* - Neoliberal governments tend to focus on the soliciting of growth, in the case of central governments, and the facilitating of growth, in the case of State and local governments, to create a favourable business climate.

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

- > *Entrepreneurialism* - Neoliberal governments tend to support entrepreneurial spirit, such as risk taking investment and profit motives, rather than political-administrative managerialism involving the provision of public services.
- > *Individualism* - Neoliberal governments tend to emphasise individual self-help, entrepreneurship and freedom of choice over government and community help.
- > *Clientelism/consumerism* - Neoliberal governments tend to focus on the satisfaction of users, clients, customers and consumers who will optimise their own individual benefits in exchange for political support rather than serving citizens who have rights and obligations within the context of a civil society.
- > *Marketisation* - Neoliberal governments tend to focus on the provision of services through privatisation, outsourcing, sub-contracting, competitive policies and market proxies in the residual public sector.
- > *Privatism* - Neoliberal governments tend to focus on the facilitation of private sector activity rather than government or community activity.

These broad policy settings together with the broader socio-economic and political conditions of neoliberal ideology, provide the context for the consideration of the use of planning theory by planners.

PLANNING THEORY IN A NEOLIBERAL STATE

Neoliberal planning theory

Given the neoliberal socio-economic and political conditions and broad policy settings which have become entrenched within governments across the world in the last 50 years, it is likely that the use of neoliberal planning theory will become more dominant amongst planners.

The approaches to planning theory that are embodied in premodern, modern, postmodern and neoliberal ideologies are summarised in Table 5.

Table 5 Ideological approaches to planning theory

Premodern	Modern	Postmodern	Neoliberal
Humanistic premise of planning (the planning end)			
<i>Utopia</i> – An end state in which individuals are emancipated towards an ideal society	<i>Collective public interest</i> – An end state in which society en masse is emancipated towards a common good for the society	<i>Group interest</i> – An end state in which groups within society are emancipated towards a good defined by those groups	<i>Individual interest</i> – There is no end state for society or societal groups; but rather the right of each individual to pursue a good life that does not harm others
Epistemological premise of planning (the planning means)			
<i>Artistic design method</i> – Universal laws of physical and aesthetic design principles which can be objectively defined by human reason	<i>Rational scientific method</i> – Universal laws of planning principles which can be defined through value-free scientific reason (positivist knowledge)	<i>Participatory method</i> – There are no universal laws; only the subjective value laden principles of individuals which can be defined through a participative process (culturally subjective knowledge)	<i>Managerialist method</i> – There are no universal laws; only an individual good which can be pursued through a managerial process of defining and implementing goals, objectives and strategies

Premodern	Modern	Postmodern	Neoliberal
Planning theories			
Physical planning (Unwin 1996; Triggs 1909)	<ul style="list-style-type: none"> Rational planning (Sharp 1940; Abercrombie 1959; Keeble 1969) Systems planning (McLoughlin 1969) Procedural planning (Faludi 1973) 	<ul style="list-style-type: none"> Advocacy planning (Davidoff 1965) Incremental planning (Lindblom 1959) Radical (action) planning (Friedmann 1987) Participatory planning (Arnstein 1969) Communicative planning (Habermas 1984; Healey 1997) 	Strategic spatial planning (Kaufman and Jacobs 2007; Healey 2007)
Planning models			
Physical planning	Comprehensive master planning	Collaborative planning	Strategic management planning
Planning era			
Before First World War	<ul style="list-style-type: none"> 1930s – avant-garde movement 1940s to 1980s – adopted by Government 	<ul style="list-style-type: none"> 1960s to 1990s – part of counter culture 1980's onwards – adopted by Government 	<ul style="list-style-type: none"> 1970s to 1990s - Neoliberal roll back Late 1990s onwards - Neoliberal roll out

Source: Goodchild 1990:126; Hirt 2002

Planning theory is based on two different premises; the end and the means. The first premise is that planning has a humanistic or social emancipation end. The second is that planning theory has an epistemological premise being the means by which planning delivers the identified end (namely social emancipation).

Humanistic premise of planning theory

In neoliberal planning theory, the planning end is not an end state for society such as the collective public interest of the society in the case of modern planning theory or societal group interests in the case of postmodern planning theory.

Rather it is the individual interest; the right of each individual to pursue a good life that does not harm others.

Epistemological premise of planning theory

Neoliberal planning theory postulates that the end of an individual good life is not pursued through the rational scientific method of value-free scientific reason to define a societal public interest in the case of modern planning theory or a participative process to define societal group interests in the case of postmodern planning theory.

Rather the neoliberal end of an individual good life is to be achieved through a strategic management process of defining and implementing goals, objectives and strategies.

In neoliberal planning theory, it is the managerialist method which is embodied in strategic management planning that is the predominant planning model.

STRATEGIC MANAGEMENT PLANNING MODEL IN A NEOLIBERAL STATE

Strategic management planning is a planning model that is focussed on the definition and implementation of specific and attainable goals, objectives and strategies. It differs from the comprehensive master planning model which aspires to an abstract common public good or interest of the society. It also differs from the collaborative planning model which focuses on societal group goods or interests as defined by those groups.

It is anticipated that strategic management planning will become the predominant planning model amongst urban planners in a neoliberal state.

The key features of the strategic management planning model, as compared with other planning models, are summarised in Table 6.

Table 6 Key features of planning models

Physical planning	Comprehensive master planning	Collaborative planning	Strategic management planning
Concept of the region or city			
<i>City Beautiful</i> – Cities are a symptom of social order and disorder	<i>City Functional / Mechanistic City</i> – Cities are an object that can be rationally ordered and mass produced	<i>Just City</i> – Cities are an expression of the social diversity of its citizens and the ecological diversity of its environment	<i>Entrepreneurial / Competitive / Productive City</i> – Regions and cities are an economic object that are competing against each other for economic growth
Planning governance			
Limited uncoordinated community and government initiatives	Government led with limited community involvement	Government led with significant community involvement	Private sector led through the market
Planning approach			
Government top down with no bottom up community involvement	Predominantly government top down with some bottom up community involvement	Predominantly bottom up community involvement with top down government involvement	Bottom up through the market with limited top down government involvement
Planning scale			
City with some district level planning	City and district level planning	City and district level planning with some local and site planning	Strategic planning at city and district scale with development planning at local and site levels
Planning horizon			
Long term	Medium term	Medium term at the city and district levels and short term at the local and site levels	Short term
Planning focus			
Physical urban form and aesthetic design based planning at the city	<ul style="list-style-type: none"> Detailed spatial urban form and infrastructure based planning at the city 	<ul style="list-style-type: none"> Infrastructure based planning at national and state levels 	<ul style="list-style-type: none"> Strategic spatial urban form and infrastructure based planning at city and

Physical planning	Comprehensive master planning	Collaborative planning	Strategic management planning
<p>level (city visions)</p>	<p>level (master, blueprint and layout plans)</p> <ul style="list-style-type: none"> • Development control based land use planning at the district level (zoning plans) 	<ul style="list-style-type: none"> • Detailed spatial urban form and infrastructure based planning at the regional level (regional plans) or city level (master plans) • Development control based land use planning at the district level (zoning plans) • Urban design based planning at local and site levels 	<p>district level in place of detailed master plans (strategic spatial plans)</p> <ul style="list-style-type: none"> • Development based planning at local and site levels in place of development control based zoning plans
Regional, city and district planning themes			
<ul style="list-style-type: none"> • Promotion of massed suburban expansion • Promotion of garden cities • City beautiful movement • Parks and open spaces movement 	<ul style="list-style-type: none"> • Redevelopment of slums with high rise buildings in open spaces • Controlled low density suburban expansion • New towns within green belts • Urban neighbourhoods criss-crossed by freeways 	<ul style="list-style-type: none"> • Renewal and regeneration of central cities and infill sites • Increased urban density within compact urban space • Containment to minimise land consumption, preserve open space and reduce infrastructure costs 	<ul style="list-style-type: none"> • Place branding, marketing, promotion and competition (Euro cities; capital cities; world cities; cool cities; creative cities) • Attraction of the creative class (IT; arts; biotechnology; science) • Attraction of corporate investment (free land or buildings; lower infrastructure charges; grants; tax relief such as stamp duty and payroll tax) • Central city and adjoining areas redevelopment for commercial office space and residential apartments • Employment centres focussed on the services sector • Mega infrastructure projects seen as strategic economic assets • Social infrastructure including exhibitions and arts, cultural and sporting venues and events for the creative classes

Physical planning	Comprehensive master planning	Collaborative planning	Strategic management planning
			<ul style="list-style-type: none"> • Suburbs as residual places • Suburban master planned communities
Local and site planning themes			
<ul style="list-style-type: none"> • More daylight and sunlight for canyon streets • Public health and sanitary reform • Tenement house reform • Municipal art and civic art 	<ul style="list-style-type: none"> • Zoning of urban space into self-contained single land use or functional districts • Reduction of urban density • Mixed flats and houses • Demolition of dilapidated buildings 	<ul style="list-style-type: none"> • Integration of land uses and functions into mixed use districts of urban space • Increased urban density • Mixed land uses • Emphasis on local context • Preservation of historic buildings and local cultural heritage 	<ul style="list-style-type: none"> • Performance based zoning (flexible zones, urban enterprise zones, business improvement districts) • Flexible building standards • Integrated development control • Reduced standards of service for infrastructure – roads and open space • Reduced garden space for houses • Urban design

Source: Goodchild 1990:126; Jackson 2009:405

A strategic management planning model operating in a neoliberal state is anticipated to have the following significant characteristics:

- > *Concept of the region or city* – Strategic management planning is focussed on ensuring that the region or city is an economic growth object which can compete efficiently against other regions or cities for economic growth. The focus is on an entrepreneurial, competitive and productive region or city.
- > *Planning governance* – Strategic management planning is market led by private sector developers.
- > *Planning approach* – Strategic management planning is a bottom up market led approach rather than the predominantly top down/bottom up approach characteristic of the comprehensive master planning model (associated with modern planning theory) or the predominantly bottom up/top down approach characteristic of the collaborative planning model (associated with postmodern planning theory).
- > *Planning scale* – Strategic management planning is focused on local and site level planning with limited regional, city and district level planning rather than on the city and district level planning characteristic of the comprehensive master planning model and local and site level planning characteristic of the collaborative planning model.
- > *Planning horizon* – Strategic management planning has a short term horizon reflecting the reality that planning is intended to be capable of continual revision in response to the market.
- > *Planning focus* – Strategic management planning is focussed on strategic spatial urban form and infrastructure based planning at city and district levels and development based planning at the local and site levels in place of the detailed plans and zoning plans associated with comprehensive master planning and collaborative planning.

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

- > *Regional, city and district level planning themes* – Strategic management planning is focussed on the following themes at the regional, city and district levels:
 - urban branding, marketing, promotion and competition;
 - central cities and adjoining areas as key economic growth areas;
 - employment centres traditionally focussed on industrial areas but increasingly focussed on the service sector;
 - mega infrastructure projects such as road and public transport which are seen as strategic economic assets;
 - key social infrastructure such as exhibition centres, science and technology parks, sports stadiums and cultural districts which are focussed on the creative classes;
 - suburbs that are seen as residual places not to be touched; the 'heartlands'.
- > *Local and site planning themes* - Strategic management planning is focussed on the following themes at the local and site levels:
 - performance based controls;
 - flexible standards;
 - integrated development control;
 - reduced infrastructure service standards (to avoid so called gold plating);
 - reduced garden space for houses;
 - urban design.

The increased use by planners of a strategic management planning model will have a significant influence on planning practice.

PLANNING PRACTICE IN A NEOLIBERAL STATE

Neoliberal planning practice

The broad neoliberal socio-economic and political conditions and associated policy settings which have emerged under neoliberal governments will encourage the use of neoliberal planning theory and models that will have an increasing influence on planning practice.

Generally speaking it is expected that policies and processes associated with the comprehensive master planning model (in the case of modern planning theory) and collaborative planning model (in the case of postmodern planning theory) will be rolled back; whilst policies and processes associated with the strategic management planning model will be rolled out through public policy and legislative reform.

The anticipated implications for planning practice of the increased use by planners of neoliberal planning theory and a strategic management planning model is summarised in Table 7.

Table 7 Implications for planning practice of neoliberal planning theory and models

Policy settings	Policy implications	Political implications
Government function		
<ul style="list-style-type: none"> • Decentralisation • Depoliticalisation • Agencification 	<ul style="list-style-type: none"> • Reduced central government planning • Limited central government control of local government planning 	<ul style="list-style-type: none"> • Greater electoral accountability • Stronger role for local clientel relationships

Policy settings	Policy implications	Political implications
	<ul style="list-style-type: none"> Contracting out of planning functions Central government off-loads unfunded risks and responsibilities to local governments Policy solutions borrowed or adapted across jurisdictional boundaries 	<ul style="list-style-type: none"> Fiscally constrained local governments
Government policy focus		
<ul style="list-style-type: none"> Liberalisation 	<ul style="list-style-type: none"> Focus on innovation and competitiveness rather than on full employment and planning Social wage is seen as a cost of production rather than as a means of redistribution to maintain social cohesion Welfare to work to reduce welfare expenditure 	<ul style="list-style-type: none"> Reduced social cohesion Increased social exclusion
Government economic management		
<ul style="list-style-type: none"> Financialisation Fiscal conservatism 	<ul style="list-style-type: none"> Limited provision of infrastructure and services Less maintenance of infrastructure and services Greater private sector provision Reduced developer contributions in new growth areas Reduced focus on urban renewal projects Focus on cost recovery and user pays 	<ul style="list-style-type: none"> Fiscally constrained governments Infrastructure and services failures Price hikes Cross-subsidies are increased Rent seeking by the private sector
Government regulation		
<ul style="list-style-type: none"> Deregulation 	<ul style="list-style-type: none"> Removal of comprehensive master planning and collaborative planning policies and practices Simplified planning regulation Plans that are more flexible Plans that give less direction to local government Plans that give more certainty and predictability to developers Plans with fewer directives and more negative regulation Plans that specifically integrate central and local government priorities Enabling regulations for major or mega projects Use of reserved planning powers (Ministerial call ins and directions) to facilitate projects Speeding up of development assessment, public inquiry and plan preparation processes 	<ul style="list-style-type: none"> Less importance of rules, processes and expert jurisdictions Less concern for development externalities Stronger role for the private sector in determining the form and location of development Potential impact on the spatial cohesion of cities Reduced oversight and increased risk of corruption Risk of regulatory capture

Policy settings	Policy implications	Political implications
Central government and local government relationship		
<ul style="list-style-type: none"> • Growthism • Entrepreneurialism 	<ul style="list-style-type: none"> • Local governments focus on place branding, marketing, promotion and competition rather than place making • Local governments focus on economic growth projects generally in central city locations at the expense of investment elsewhere • Politicians and planners gain financial acumen and act as urban entrepreneurs • Governments mimic corporate style and logic • Public services seen as ineffective and wasteful and a drain on entrepreneurial activity 	<ul style="list-style-type: none"> • Local governments forced to compete with each other for economic growth • Reduction in public services
Government and private sector relationship		
<ul style="list-style-type: none"> • Marketisation • Privatisation 	<ul style="list-style-type: none"> • Rise of the intermediate services sector (private professional advisers who do planning work) • Developer led development rather than plan led development • Developers take over plan making • Developers are stakeholders in major public infrastructure projects • Public assets privatised or divested • Privately governed community interest developments such as residential subdivisions, apartment developments and master planned gated communities with private streets, services and governments such as Homeowner Associations • Compulsory purchase of private land for public benefit by private landholders • Business improvement districts (UK/US) where revenue from a district is spent in a district • Privatised planning regulation (for example private certification) • Limited public review of public infrastructure projects (focus is on selling the project not evaluating the project) • Private sector involvement in financing and operating infrastructure • Competitive bidding for urban renewal and infrastructure projects • Private sector provision of rental housing rather than public housing • Privatisation of public spaces (public 	<ul style="list-style-type: none"> • Loss of citizen entitlements • Excess profits • Price hikes • Asset stripping • Poor driven to the worst located areas • Profit seeking by private contractors increases public sector expenses

Policy settings	Policy implications	Political implications
	plazas; pavements; urban parks; government land and buildings <ul style="list-style-type: none"> Privately governed and secured neighbourhoods through management (for example gated communities, community interest developments (US) and Homeowners Associations (US)) and passive design (for example master planned residential estates) 	
Government and civil society relationship		
<ul style="list-style-type: none"> Individualism Clientelism 	<ul style="list-style-type: none"> Corporate style advisory boards replace community based consultative groups Focus on owner occupied and rental housing rather than public housing, community houses and housing associations Focus on private schools rather than public schools, TAFE and other public educational facilities Focus on private hospitals and private health insurance rather than public hospitals Limited investment in social infrastructure to address areas of social exclusion 	<ul style="list-style-type: none"> Downsizing of services Limited access to shelter and services for the poorest Rise in informality in cities

Source: Jessop 2002; Jackson 2009:405; Robinson 2011:1100

Waves of neoliberal planning reform in Australia

In Australia, three distinct waves of neoliberal planning reform by State governments can be broadly identified as summarised in Table 8:

- > *First wave* - Neoliberal roll back associated with Liberal National Party State governments where state, regional and city strategic planning was eschewed in favour of standardised district level land use based zoning plans to maximise development control efficiency and local and site level development control plans to facilitate development.
- > *Second wave* - The neoliberal roll back was subsequently moderated by State Labor governments under which State planning policy guidance was provided on balancing social, environmental and economic matters, detailed spatial plans were prepared at regional and local government levels and standardised land use zoning plans and neighbourhood plans were prepared to guide future development.
- > *Third wave* - The neoliberal roll out has been reintensified since 2010 by State Liberal National Party governments which have implemented or proposed:
 - State planning policies focused on economic growth;
 - strategic spatial plans for regional and local government areas;
 - land use zoning plans and neighbourhood plans that are development not control oriented.

Table 8 Waves of neoliberal planning reform in Australia

Planning scale	First wave - Neoliberal roll back	Second wave - Neoliberal roll back moderated	Third wave - Neoliberal roll out
State governments	QLD - National and Liberal Party governments (1970s - 1989) NSW - Greiner/Fahey Liberal governments (1988 - 1995) VIC - Kennett Liberal government (1992 - 1999)	QLD - Goss, Beattie and Bligh Labor governments (1989 - 2012) NSW - Labor governments (1995 - 2011) VIC - Bracks and Brumby Labor governments (1999 - 2007)	QLD - Newman Liberal National Party government (2012 onwards) NSW - O'Farrell Liberal government (2011 onwards) VIC - Baillieu and Napthine Liberal National Party governments (2010 onwards)
State level planning	Apparatus dismantled as district level planning is seen as the appropriate planning scale	State planning policies provided guidance for a wide range of economic, social and environmental matters	State planning policies amended to prioritise economic growth over social and environmental matters
Regional level planning	Apparatus dismantled and State government devolution to regional government offices	Detailed spatial urban form and infrastructure plans for metropolitan areas and regional cities	Strategic spatial urban form and infrastructure plans for metropolitan areas and other regions
City/town level planning	Rejection of strategic spatial planning	Detailed spatial urban form and infrastructure plans for local government areas	Strategic spatial urban form and infrastructure plans for local government areas
District level planning	Standardised land use based zoning plans to maximise development control efficiency	Standardised land use based zoning plans with increased self-assessable and code assessable development to maximise development control efficiency	Standardised land use based zoning plans which are development not control oriented
Local and site level planning	Development control plans to facilitate local or site level development	Neighbourhood plans to protect local areas and facilitate known local or site level development	Neighbourhood plans which are development not control oriented

However it is critical to note that the characterisation of neoliberalism planning reform into three waves obscures the hybrid nature of neoliberalism where there have been multiple configurations of neoliberalism at different planning scales within and between Australian states and where the processes of neoliberal roll back of Keynesianism and the roll out of neoliberalism have been in conflict (McGuirk 2006:61).

ROLE OF THE PLANNER IN A NEOLIBERAL STATE

The emergence of neoliberal planning theory and its associated strategic management planning model and consequential implications for planning practice have inevitably resulted in a re-evaluation of the role of the planner in urban change.

The role of a planner under the physical planning, comprehensive master planning, collaborative planning and strategic management planning models is summarised in Table 9.

Table 9 Planner's role under different planning models

Physical planning	Comprehensive master planning	Collaborative planning	Strategic management planning
Knowledge and skills			
Specialist knowledge of utopian ideals and planning principles	Specialist knowledge of planning principles and specialist skills to manage the planning process to define the public interest and planning principles	Specialist knowledge and skills to manage the planning process to facilitate consensus of group interests	Specialist knowledge and skills to manage the planning process to facilitate economic growth outcomes
Decision making			
<i>Utopian rationality</i> - Rational vision	<i>Instrumental rationality</i> - Rational plan	<i>Communicative rationality</i> - Rational process	<i>Economic rationality</i> - Rational outcome
Ethical perspective			
<i>Technician</i> – Value neutral adviser to a decision maker	<i>Technician</i> – Value neutral adviser to a decision maker	<i>Politician</i> – Value committed activist that advocates policies for group interests	<i>Hybrid</i> – Hybrid of a technician and a politician that advocates for economic growth outcomes

In a neoliberal state it is expected that the planner will be required to develop specialist knowledge and skills to manage the planning process to facilitate economic growth outcomes; in preference to social and environmental outcomes and in preference to a common public interest for the society or societal group interests.

In a neoliberal state, a planner is expected to make decisions (or provide recommendations) based not on instrumental rationality (that is the rationality of the plan) or communicative rationality (that is the rationality of the planning process) but rather on the basis of economic rationality. A rational decision is one which is in the general interest of the public as defined by means of a potential Pareto improvement; namely that a policy should only be implemented if those who benefit from the policy could compensate those that lose from the policy and still be better off (Gleeson and Low 2000b:15).

This will require the planner to gain greater financial and economic acumen and act as an urban entrepreneur.

This will inevitably require the planner to adopt a hybrid role involving the following (Howe 1980; Steele 2009:4):

- > first, as a technician that seeks to be a value neutral adviser to a decision maker; but
- > secondly, and more significantly, as a politician who is a value committed activist that advocates economic growth outcomes.

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

It is this second political role that is likely to cause an ethical dilemma for some planners for the following reasons:

- > first, there is currently a strong professional and in some cases personal commitment on the part of some planners, to sustainable development (or ecological sustainability) and its goal of balanced economic, social and environmental outcomes;
- > second, to actively facilitate development could be seen by some planners as co-opting planning to the private sector which is only one of the sectoral interests involved in urban change and whose focus is quite appropriately limited only to profit.

CONCLUSIONS - ARE WE ALL NEOLIBERALS NOW?

The planner plays a critical role in influencing and sometimes preventing urban change through their work for the private, public and third sectors; which are the institutions responsible for urban change in our society.

The traditional modern and postmodern perspectives of planning that have underpinned the planners' use of planning theory and practice are being challenged by an energised neoliberal ideology.

Neoliberalism rejects planning's role as a tool to correct and avoid market failure and seeks to subsume planning as a minimalist form of spatial regulation to provide certainty to the market and facilitate economic growth.

Planners must understand that neoliberalism is but a process; it is not an end state of history or geography. The neoliberal project is neither universal, monolithic or inevitable; it is contestable (Peck and Tickell 2002:383).

Neoliberalism is simply the process of restructuring the relationships between the public, private and third sectors, to rationalise and promote a growth first approach to urban change. As stated earlier in this paper; Neoliberalism = Classical liberalism + (Theory of growth + Keynesianism).

Each planner must personally and professionally determine where they stand in relation to the restructuring of the institutions of urban change that is being heralded by the neoliberal reform of planning and the planning system in Australia.

As a profession it is critical that planners regain the trust of the public and their elected representatives. This can only occur where the decision making and knowledge and skills of planners is seen as independent from politics. This requires planners to play to their strengths:

- > Collaborative planning should be used to identify societal interests whilst acknowledging to the public that not all of the public's interests can be translated to a physical outcome in a planning instrument.
- > Comprehensive evidence based planning should be used to demonstrate to politicians both the money that will be wasted on policies that do not work as well as the benefits that will accrue from policies that will work.

In short planners must reclaim their professional credibility by asserting their right to contradict the public and politicians. The first step involves the planning profession taking an active and positive part in the forthcoming contest between planning and neoliberalism.

REFERENCES AND FURTHER READING

Note - This paper draws in part from a paper titled "Reinvigorating planning and the planning system in Queensland - A neoliberal perspective" prepared for the 2012 Conference of the Planning Institute of Australia (Queensland Branch).

Abercrombie, P 1959, *Town and Country Planning*, Oxford University Press, London.

Alexander, E 1986, *Approaches to Planning: Introducing Current Planning Theories, Concepts and Issues*, Gordon and Breach, Langhorne.

Alexander, ER, Mazza, L and Moroni, S 2012, 'Planning without plans? Nomocracy or teleocracy for social-spatial ordering', *Progress in Planning*, vol. 77, pp. 37-87.

Allmendinger, P and Houghton, G 2012, 'Post-political spatial planning in England: A crisis of consensus?', *Transactions of the Institute of British Geographers*, vol. 37, no. 1, pp. 89-103.

Arnstein, S 1969, 'A ladder of citizen participation', *Journal of the American Institute of Planner*, vol. 35, no. 4, pp. 216-224.

Balducci, A, Boelens, L, Hillier, J, Nyseth, T and Wilkinson, C 2011, 'Strategic spatial planning in uncertainty: Theory and exploratory practice', *Town Planning Review*, vol. 82, no. 5, pp. 483-501.

Calthorpe, P 1993, *The Next American Metropolis*, Princeton Architectural Press, New York.

Clarke, G 1992, 'Towards appropriate forms of urban spatial planning', *Habitat International*, vol. 16, no. 2, pp. 149-165.

Cook, N and Ruming, K 2008, 'On the fringe of neoliberalism: Residential development in our outer suburban Sydney', *Australian Geographer*, vol. 39, no. 2, pp. 211-228.

Davidoff, P 1965, 'Advocacy and pluralism in planning', *Journal of the American Institute of Planners*, vol. 31, no. 4, pp. 186 -197.

Dowling, R and McGuirk, P 2009, 'Master-planned residential developments: Beyond iconic spaces of neoliberalism?', *Asia Pacific Viewpoint*, vol. 50, no. 2, pp. 120-134.

Eagle, SJ 2009, 'Reflections on private property, planning and state power', *Planning and Environmental Law*, vol. 61, no. 1, pp. 3-11.

Fainstein, S 2000, 'New directions in planning theory', *Urban Affairs Review*, vol. 35, pp. 451-478.

Faludi, A 1973, *Planning Theory*, Pergamon, Oxford.

Filion, P 1999, 'Rupture of continuity? Modern and postmodern planning in Toronto', *International Journal of Urban and Regional Research*, vol. 23, no. 3, pp. 421-444.

Filion, P 2001, 'The urban policy-making and development dimension of fordism and post-fordism: A Toronto case study', *Space and Polity*, vol. 5, no. 2, pp. 85-111.

Filion, P and Kramer, A 2011, 'Metropolitan-scale planning in neoliberal times: Financial and political obstacles to urban form transition', *Space and Polity*, vol. 15, no. 3, pp. 197-212.

Flinders, M and Buller, J 2006, *'Depoliticisation: Principles, Tactics and Tools'*, British Politics vol. 1, pp. 293-318

Forester, J 1989, *Planning in the Face of Power*, University of California, Berkeley.

Forster, C 2006, 'The challenge of change: Australian cities and urban planning in the new millennium', *Geographical Research*, vol. 44, no. 2, pp. 173-182.

Friedmann, J 1987, *Planning in the Public Domain from Knowledge to Action*, Princeton University Press Princeton, New Jersey.

Friedmann, J 2008, 'The uses of planning theory: A bibliographic essay', *Journal of Planning Education and Research*, vol. 28, pp. 247-257.

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

Giddens, A 2000, *The Third Way and its Critics*, Polity Press, Cambridge.

Gleeson, B and Low, N 2000a, 'Revaluing planning Rolling back neoliberalism in Australia', *Progress in Planning*, vol. 53, pp. 83-164.

Gleeson, B and Low, N 2000b, 'Unfinalised business: neoliberal planning reform in Australia', *Urban Policy and Research*, vol. 18, no. 1, pp. 7-28.

Goodchild, B 1990, 'Planning and the modern / postmodern debate', *The Town Planning Review*, vol. 61, no. 2, pp. 119-137.

Gunder, M 2010, 'Planning as the ideology of (neoliberal) space', *Planning Theory*, vol. 9, no. 4, pp. 298-314.

Habermas, J 1984, *Theory of Communicative Action*, Polity Press, London.

Haughton, G and McManus, P 2012, 'Neoliberal experiments with urban infrastructure: The cross city tunnel, Sydney', *International Journal of Urban and Regional Research*, vol. 36, no. 1, pp. 90-105.

Healey, P 1997, *Collaborative Planning*, University of British Columbia Press, Vancouver.

Healey, P 2007, *Urban Complexity and Spatial Strategies: Towards a Relational Planning for Our Times*, Routledge, London.

Hirt, S 2002, 'Postmodernism and planning models', *Critical Planning*, vol. 9, pp. 116-127.

Hirt, S 2005, 'Toward postmodern urbanism? Evolution of planning in Cleveland Ohio', *Journal of Planning Education and Research*, vol. 25, pp. 27-42.

Hirt, S 2009, 'Premodern, modern, postmodern? Placing new urbanism into a historical perspective', *Journal of Planning History*, vol. 8, no. 3, pp. 248-273.

Howard, E 1989, *Garden Cities of Tomorrow*, Faber and Faber, London, Reprinted 1946.

Howe, E 1980, 'Role choices of urban planners', *Journal of the American Planning Association*, vol. 46, no. 4, pp. 398-409.

Jackson, J 2009, 'Neoliberal or third way? What planners from Glasgow, Melbourne and Toronto say', *Urban Policy and Research*, vol. 27, no. 4, pp. 397-417.

Jacobs, J 1961, *The Death and Life of Great American Cities*, Rizzoli, New York.

Jessop, B 2002, 'Liberalism, neoliberalism and urban governance: A state theoretical perspective', *Antipode* vol. 34, pp. 452-472

Kaufman, JL and Jacobs, HM 2007, 'A public planning perspective on strategic planning', *Journal of the American Planning Association*, vol. 53, no. 1, pp. 23-33.

Keeble, LB 1969, *Principles and Practice of Town and Country Planning*, The Estates Gazette, London.

Kirkpatrick, O and Smith, M 2011, 'The infrastructure limits to growth: Rethinking the urban growth machine in times of fiscal crisis', *International Journal of Urban and Regional Research*, vol. 35, no. 3, pp. 477 – 503.

Lindblom, C 1959, 'The science of muddling through', *Public Administration Review*, vol. 19, pp.78-88.

Lloyd, MG and Peel, D 2007, 'Neo-traditional planning. Towards a new ethos for land use planning?', *Land Use Policy*, vol. 24, no. 2, pp. 396-403.

Lloyd, MG and Peel, D 2007, 'Shaping and designing model policies for land use planning', *Land Use Policy*, vol. 24, no. 1, pp. 154-164.

Lord, A and Tewdwr-Jones, M 2012, 'Is planning "under attack?" Chronicling the deregulation of urban and environment planning in England' *European Planning Studies* pp. 1-17.

Lynch, K 1960, *The Image of the City*, MIT Press, Cambridge Massachusetts.

Ian WRIGHT, Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

Lynch, K 1981, *A Theory of Good City Form*, MIT Press, Cambridge Massachusetts.

McGuirk, P 2005, 'Neoliberalist planning? Re-thinking and re-casting Sydney's metropolitan planning', *Geographical Research*, vol. 43, no. 1, pp. 59-70.

McLoughlin, JB 1969, *Urban and Regional Planning: A Systems Approach*, Faber and Faber, London.

Milroy, B 1991, 'Into postmodern weightlessness', *Journal Planning Education and Research*, vol. 10, no. 3, pp. 181-187.

Minnery, J 2012, 'Affordable housing, urban governance and special purpose authorities in a fast growing region', *48th International Society of City and Regional Planners Congress*, available at: http://www.isocarp.net/projects/case_studies/cases/cs_info.asp?ID=2152.

Moroni, S 2004, 'Towards a reconstruction of the public interest criterion', *Planning Theory*, vol. 3, no. 2, pp.151-171.

Moroni, S 2007, 'Planning liberty and the rule of law', *Planning Theory*, vol. 6, no. 2, pp. 146-163.

Moroni, S 2010, 'Rethinking the theory and practice of land use regulations; Towards nomocracy', *Planning Theory*, vol. 9, no. 2, pp.137-155.

Neuman, M 2010, 'City planning and infrastructure: Once and future partners', *Journal of Planning History*, vol. 9, no. 2, pp. 21-42.

Newman, P 2000, *Promoting Sustainable Urban Change*, Murdoch University, http://www.istp.murdoch.edu.au/ISTP/casestudies/Case_Studies_Asia/susturbc/susturbc.html.

Pallagst, K 2006, *Growth Management in the San Francisco Bay Area: Interdependence of Theory and Practice*, Institute of Urban and Regional Development, University of California, Berkeley.

Peck, J and Tickell, A 2002, 'Neoliberalizing space', *Antipode*, vol. 34, no. 3, pp. 380-404.

Robinson, J 2011, 'The travels of urban neo-liberalism: Taking stock of the internationalisation of urban theory', *Urban Geography*, vol. 32, no. 8, pp. 1087-1109.

Roy, A 2008, 'Post-Liberalism: On the ethico-politics of planning', *Planning Theory*, vol. 7, no. 1, pp. 92-102.

Rudd, K 2009, 'The Global Financial Crisis' *The Monthly Essays*, February 2009.

Ruming, KJ 2005, 'Partnership, master planning and state provisions: A case study of 'actually existing neoliberalism' on the central coast of New South Wales', *Geographical Research*, vol. 43, no. 1, pp. 82-92.

Ruming, KJ 2009, 'The complexity of comprehensive planning partnerships: The case of the Warnervale town centre', *Urban Policy and Research*, vol. 27, no. 1, pp. 25-42.

Sager, T 1999, 'The rationality issue in land UK planning', *Journal of Management History*, vol. 5, no. 2, pp. 87-107.

Sager, T 2009, 'Responsibilities of theorists: The case of communicative planning theory', *Progress in Planning*, vol. 72, pp. 1-51.

Sager, T 2009, 'Planners role: Torn between dialogical ideals and neoliberal realities' *European Planning Studies*, vol. 17, No. 1, pp. 65-84.

Sager, T 2011, 'Neo-liberal urban planning policies: A literature survey 1990 - 2010', *Progress in Planning*, vol. 76, pp. 147-199.

Sager, T 2012, 'Comment: Adopting planners' professionalism for inclusive processes in neoliberal environments' *Town Planning Review* vol. 83 no. 5, pp. 619-623.

Sharp, T 1940, *Town Planning*, Penguin, Harmondsworth.

Steel, W 2009, 'Australian urban planners: Hybrid roles and professional dilemmas', *Urban Policy and Research*, vol. 27, no. 2, pp. 189-203.

Ian WRIGHT, 'Are we all neoliberals now? Urban Planning in a neoliberal era, '49th ISOCARP Congress 2013'

Taylor, N 1999, 'Anglo-American town planning theory since 1945: Three significant developments but no paradigm shifts', *Planning Perspectives*, vol. 14, no. 4, pp. 327-345.

Tewdwr-Jones, M 2008, 'The complexity of planning reform: A search for the spirit and purpose of planning', *The Town Planning Review*, vol. 79, no. 6, pp. 673-688.

Tochterman, B 2012, 'Theorizing neoliberal urban development', *Radical History Review*, vol. 112, pp. 65 – 87.

Triggs, HI 1909, *Town Planning, Past, Present and Possible*, Methuen and Company, London.

Unwin, R 1996, *Town Planning in Practice: An Introduction to the Art of Designing Cities and Towns*, 4th edn, Princeton Architectural Press, New York.

Watson, V 2009, 'The planned city sweeps the poor away: Urban planning and 21st century' *Urbanisation, Progress in Planning*, vol. 72, pp. 151-193.

Wright, FL 1932, *The Disappearing City*, Payson, New York.

Wright, IL and Cleary, S 2012, 'Reinvigorating planning and the planning system in Queensland - A neoliberal perspective', *Proceedings of the Planning Institute of Australia Annual Conference*, September 2012.

Peri-Beijing–Tianjin–Hebei Cross-boundary Mega-region Planning towards Sustainability in Urbanizing China

Huiliang YIN, China Academy of Urban Planning and Design, China

Fangxin YI, China Academy of Urban Planning and Design, China

1. Introduction

China has experienced unprecedented urbanization and the urban population increased from 10.64% in 1949 to 49.95% in 2010 (Zou, 2010; Zhou, et.al, 2013). Under the rapidly urbanization, mega-region planning have become the motors of the global economy in the accelerated urbanization. Facing the fiercely competition pressure between metropolitan areas, cross-boundary mega region are engaged actively in cooperation and collaboration in planning and institution building in an effort to turn urbanization and globalization as far as possible to achieve sustainability.

It is well known that there has been a mega-region planning fever since 2000s in post-reform China (Lin, 2001; Yang and Wang, 2008). There are abundant of research on Chinese urbanization. However, recent studies on mega-region planning are confined to the discussion of city-region or urbanization pace and rate of China. This study attempts to discuss the mega-region Peri-Beijing-Tianjin-Hebei Area (*Huanshouduquan*, PBTHA) planning as a cross-boundary case to probe into the significances and difficulties of the cross-boundary mega-region planning. It is not only preliminary enquiry on the practice of mega-region planning, but also an experimental attempts to discuss the cross-boundary planning and mega-region governance at the international planning platforms.

This paper is organized as follows. The first part considers the current status of mega-region area and mega-region planning in post-reform China to provide a background for this study. Following that, the paper introduces the characteristics of the PBTHA. Three main features are analyzed in this part. In the third section, the major issues and main ideas of the planning are discussed. It addresses the difficulties and main contributions of the planning. Moreover, the process of planning implementation is analyzed and assessed. Experience in the cross-boundary planning is discussed in the final parts.

1.1 Chinese Mega-region Area Planning

In recent years, many city governments have attempted to build mega-region area planning during the transition from state socialism to market economy in post-reform China. In order to enhance the competitiveness of the region to achieve sustainability, mega-region planning is becoming a new initiative in Chinese spatial planning (Gao, 2004; Qian and Xie, 2004; Zhang, 2003; Luo and Shen, 2008). A series of mega-region planning has been phased and proposed from central government to provincial government, including Jingjinji Mega-region planning, Pearl-delta River Mega-region planning, Chengyu Mega-region planning. Most parts of mega-region planning are cross-boundary plan, which cover different provinces and the difficulties and significances of the planning are self-evident.

1.2 Peri-Beijing-Tianjin-Hebei Area

Peri-Beijing-Tianjin-Hebei Area (*Huanjingjinji*, PBTHA) refers to those areas which locates around the outside of the capital city of Beijing (*Huanshoudu*) and includes four prefecture-level cities Zhangjiakou, Chengde, Langfang and Baoding. The four cities include 12 districts, 6 cities, 45 counties and 359 towns with a total area of 103, 000 km². The Upper Peri-Beijing

area (*Huanshoudu Qianyan Diqu, UPBA*) includes those 17 counties, which locate tightly with the capital city of Beijing and have a total area of 34.8 km².

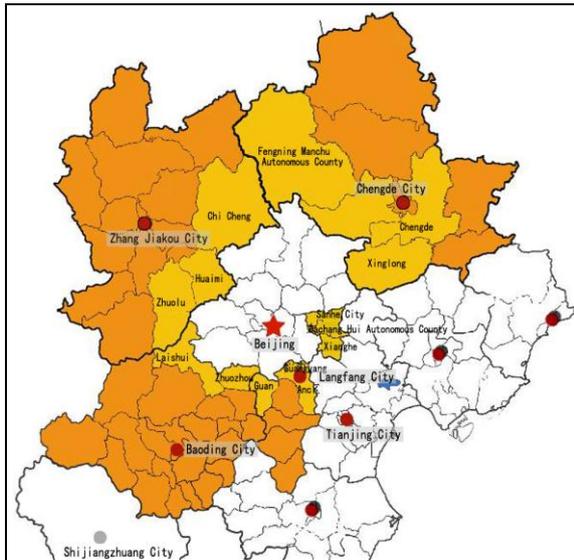


Figure 1: PBTHA Cities

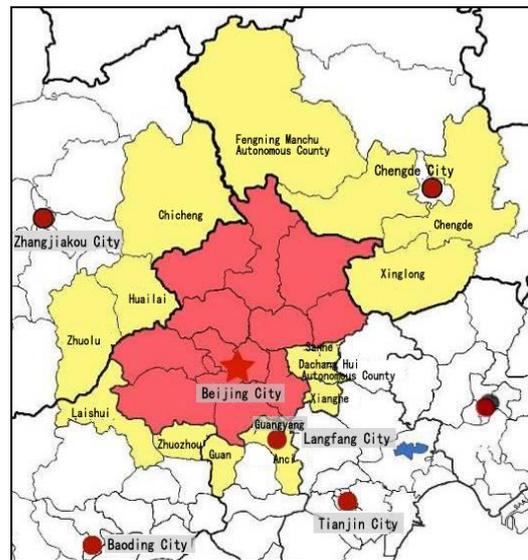


Figure 2: UPBA Cities

Table 1 PBTHA Cities Statistics

SCOPE	AREA (km ²)	TOTAL POPULATION	Urban population	The urbanization rate (%)	GDP (Billion Yuan)	GDP per capita (Yuan)
Zhangjiakou	37,000	4235,000	1863,000	44.0	80.03	19,000
Chengde	40,000	3442,000	1330,000	38.6	76.01	22,000
Langfang	6,000	4122,000	1950,000	47.3	114.75	28,000
Baoding	21,000	11017,000	3950,000	35.9	173.0	16,000
Sum	103,000	22816,000	9093,000	39.9	443.8	19,000
Hebei Province	188,000	70344,000	30769,000	43.7	1723.55	246,000
Proportion of four cities in total province (%)	548,000	324,000	296,000	—	2.57	—
Beijing	16,000	17550,000	14918,000	85.0	1186.59	69,000

Sources: HBSB, 2009

2. Characteristics of PBTHA

2.1 Significant differences in natural condition

The total area of PBTHA is five times more than the area of Beijing and UPBA area is twice more than the total area of Beijing. There are significant differences in natural condition of the four cities of PBTHA. Besides the huge differences in the total area, the natural condition varies with the topography and natural landscape. The cities in the northwestern part, Zhangjiakou and Chengde, are mainly mountains and hilly and the cities in the southeastern part, Langfang and Baoding, are mainly plain landform. Thus, the huge differences of natural condition lead to the imbalance distribution of the regional population. The total population of four cities is one thirds of the population of Hebei province, equals to 1.4 times more than the population of Beijing. Furthermore, the total population of UPBA is one thirds of the population of Beijing and the urban population difference is even larger. The urbanization

rate of UPBA is merely 37.3%, compared with the urbanization rate of Beijing of 84.9% in 2008.

Table 2 UPBA Cities Statistics

SCOPE	TOTAL POPULATION	AREA (km ²)	Urban population	The urbanization rate (%)	GDP (Billion Yuan)	GDP per capita (Yuan)
UPBA	5629,000	33,000	2101,000	37.3	121.2	20,200
Beijing	16950,000	16,000	14391,000	84.9	912.2	60,100

2.2 Poor economic condition and primitive industrial level

Compared with the economic development of Beijing, the total GDP of PBTHA four cities are much lower. The per capita GDP of UPBA only accounts for one thirds of per capita GDP of Beijing. Among them, the economic development of Baoding and Langfang is comparatively higher than the economic development of Chengde. However, the per capita GDP of most parts of the counties are much lower than the average provincial per capita GDP level.

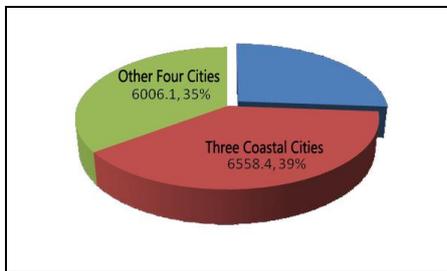


Figure 3: UPTHA cities and coastal cities economic proportion (0.1 billion, %)

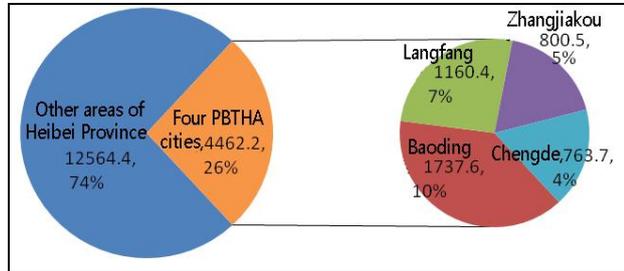


Figure 4: UPTHA cities economic proportion

Concerning the economic level of UPBA, the 17 counties could be divided into three groups, with the phenomenon of “east rich, west poor”. The first group includes those counties with GDP 10 billion above, including Sanhe, Zhuozhou and Xianghe, which accounts for 43.48% of total GDP of 17 counties. The second group includes those counties with GDP level between 5-10 billions, which accounts for 40.43% of total GDP of 17 counties. The third group includes the counties with GDP level above 5 billion.

In regard to the development level of the PBTHA four cities, all of them stay at the primitive industrial development stage. Most of the cities mainly focus on the development of heavy industry, which make a significant impact on the environment of the whole area.

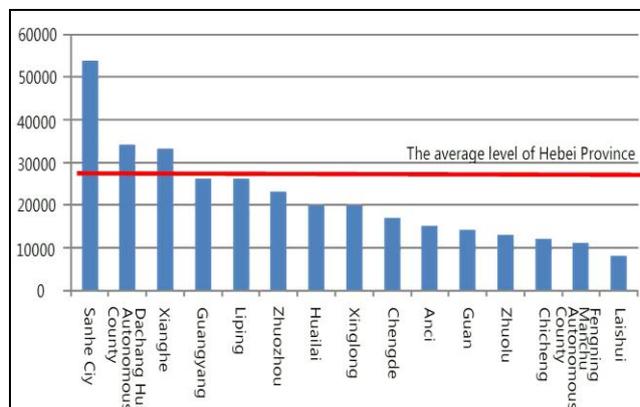


Figure 5: Per-capita GDP of UPBA Cities (Yuan)

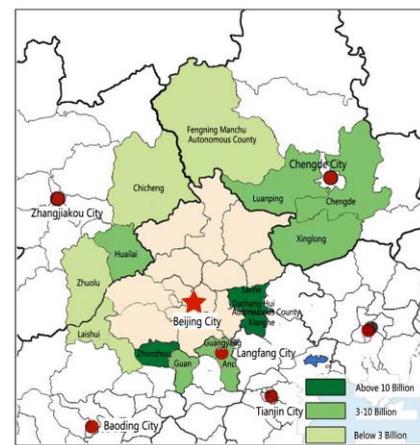


Figure 6: UPBA three groups

2.3 Imbalance Urbanization Development

Another significant feature of the whole area is the imbalance urbanization development. In 2009, the urbanization rate of PBTHA four cities are merely 39.9%, lagging behind the average urbanization rate of Hebei province 43.7% and national average rate of 46.6%. Regional differences of urbanization lie in different cities. Among the four cities, the urbanization rate of Langfang, Zhangjiakou, Baoding and Chengde is 47.3%, 44.0%, 35.9% and 38.6% respectively. However, the urbanization growth rate is comparatively amazing. The average PBTHA urbanization growth rate has increased from 32.0% to 40.1% with an annual increase rate of 1.35%.

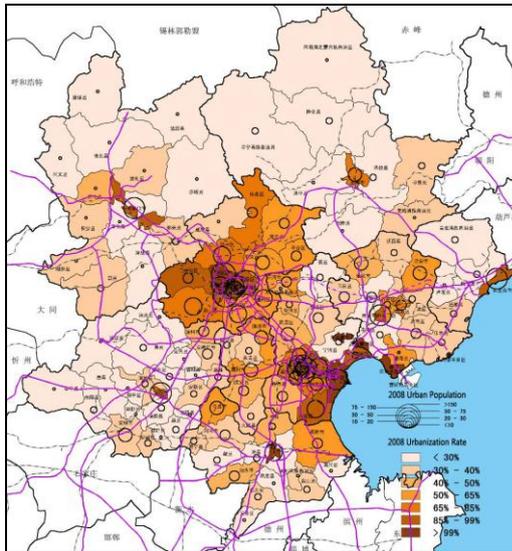


Figure 7: Urbanization Rate

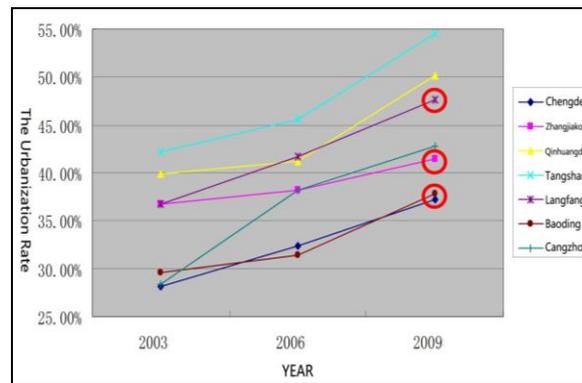


Figure 8: Urbanization Growth Rate

The urban population of four cities distribute along the traditional transportation corridors. The towns and counties are main attractors to the total population. As shown in Figure 9, towns contribute most to attracting urban population to cluster around the main urban area. It is suggested that the urbanization pattern of PBTHA shows a form of urbanization from below, different from those urbanization from above. Theoretically, the prefecture-level cities, often known as core cities, should be played a significant role in attracting urban population. However, the contribution index shown in the figure 9 suggests that the counties and towns play a more significant role in attracting urban population. This urbanization pattern identifies that there are regional inequalities of the cities of PBTHA.

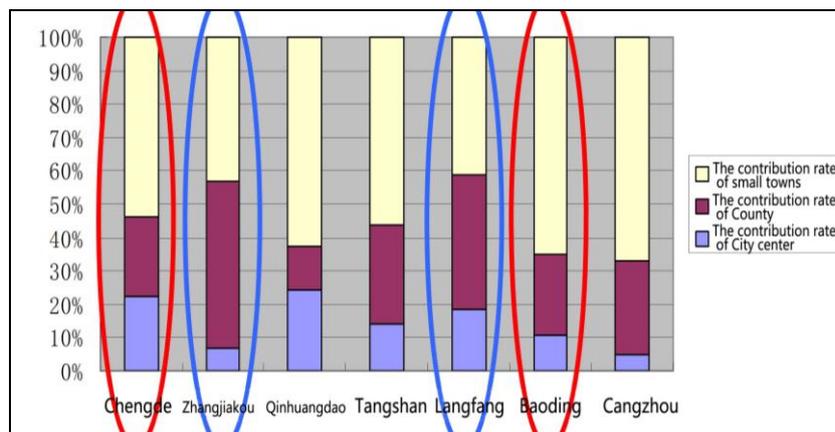


Figure 9: Contribution Rate of Towns/County/City Center

2.4 Discussion

Generally speaking, the three main features of PBTHA illustrate the significances and difficulties of the project that need to be solved and working on. The diverse natural

conditions contribute to the unequal development of the cities and different economic level of the cities. The unequal distribution of urban population attributes to the imbalance level of urbanization rate. The regional inequalities make the cross-boundary regional cooperation hard to put forward. Thus, the planning proposes a series of strategies and planning measures concerning the regional inequalities.

3. Key Issues of Cross-boundary Mega-region Planning

As discussed above, the PBTHA mega-region consists of four prefecture-level cities of Hebei province, Zhangjiakou, Chengde, Langfang and Baoding, which locate outside the capital city of Beijing. The PBTHA region can be seen as a new regional entity created by the Hebei provincial government. Previous research by Asian Development Bank has identified that there was a significant poor belt around the capital city of Beijing, quoted as Peri-capital Poor Belt (*Huanshoudu pingkun dai*)¹. The economic development of PBTHA cities has been lagged thousands of times behind the capital city of Beijing. Moreover, the PBTHA cities have less advantage in competition for foreign direct investment (FDI) and infrastructure projects such as railways and airports with the giant Beijing. As shown in figure 10, the different economic level between Beijing, Tianjin and the PBTHA cities had been exacerbated during 1994 and 2008.

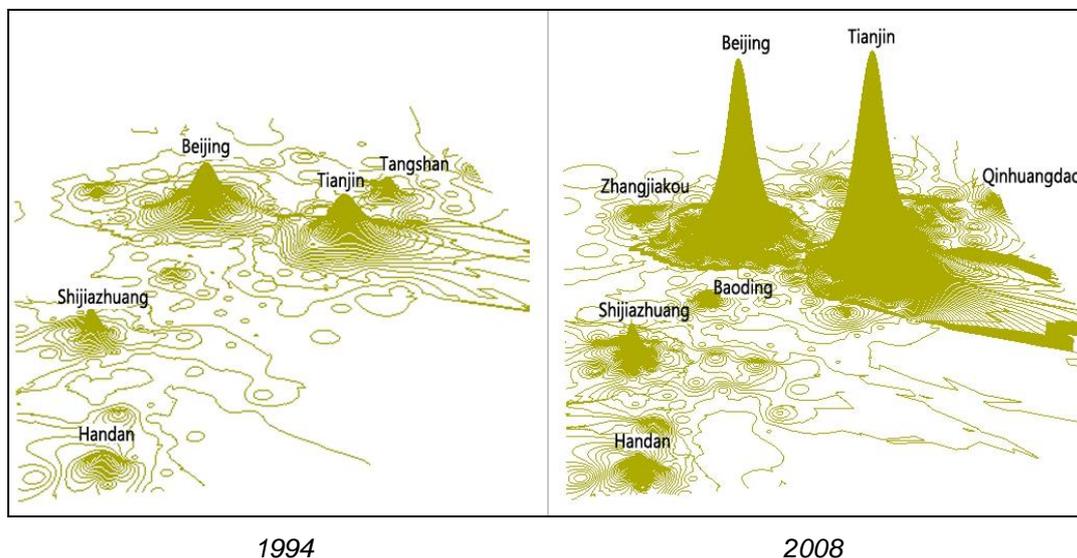


Figure 10 Jingjinji Cities Economic Energy Level

In order to alleviate the serious problems of vicious urban competition between Beijing and PBTHA cities, the provincial government of Hebei initiated the cross-boundary mega-region planning to coordinate the development of four cities to probe into a balance way to achieve sustainable development for both Beijing and PBTHA cities, when Beijing intends to rephrase its master plan. The provincial Construction Commission authorized the planning task to China Academy of Urban Planning and Design to produce the plan. The PBTH mega-region plan can be viewed as a blueprint for cooperation initiated by the higher-level provincial government of Hebei. Actually, it is the good wishes of Hebei province to solve its development problem rather than a cooperation and negotiation between Hebei and Beijing. Officially, major objectives of PBTH mega-region planning are stipulated.

- The first objective is to make use of the dominant role of the capital city of Beijing for regional economic development. The PBTHA region should become an engine of development in the Beijing-Hebei-Tianjin (*Jingjinji*) Metropolitan area. Most importantly, it will pursue a difference strategic development role to enhance the cooperation with Beijing, stimulating the development of northern regions of Hebei.
- The second objective is to alleviate problems of environmental pollution and serious vicious urban competition between PBTHA cities and Beijing and to enhance urban and regional competitiveness and achieve regional sustainability.

- The third objective is to improve the relationship between the PBTHA cities and Beijing. It is self-evident that development of PBTHA cities has not been benefited from its proximity to Beijing. On the contrary, Beijing plays a negative role in the regional economic development, plundering the capital and resources of the PBTHA cities. Many preferential policies were offered to manufacturing investors of Beijing, competing against the investment of the region and decreasing the competitiveness of PBTHA cities in manufacturing industry. The planning intends to probe into the adjustment of the relationship between Beijing and PBTHA cities.
- The fourth objective is to enhance regional competitiveness to achieve sustainability in post-reform China. Beijing is the capital city of China. It is undeniable that the role of PBTHA cities is also significant politically as well as economically.

Thus, the planning focuses on poverty alleviation between different regions, increasing of environmental protection, cross-boundary infrastructure construction and establishment and cross-boundary mega-region governance. It was a comprehensive process covering industrial development, spatial planning, environment protection, poverty alleviation and more.

3.1 Poverty Alleviation

The planning proposes industrial development to alleviate the regional poverty and inequality regional economic distribution. It plans to increase the economic level of PBTHA four cities to a certain level. The GDP will achieve 35% of the total GDP of Hebei province. The added-value of tertiary industry will account for 45% and the total industry of the area will upgrade from the labor intensive manufacturing industry to capital intensive industry. It advocates developing low carbon industry and high-tech industry. It also illustrates to transform and upgrade the traditional equipment manufacturing industry, electronic information industry and urban industry and actively incubate new energy, new material and bio-industry. Furthermore, it calls for actively develop leisure industry, modern logistics industry, financial services,

On the other land, the planning proposes to accelerate the urbanization through an accelerated urbanization strategy to achieve poverty alleviation. The urbanization strategy is stipulated as follows:

- The first strategy is to enhance the development of the urban center of PBTHA four cities, Chengde, Zhangjiakou, Langfang and Baoding. The first strategy is to adopt the urbanization from the above strategy to reinforce the development role of urban center cities. The specific different development strategy of each city is as follows:
 - Changde, previously known as Jehol or Rehe, situated northeast of Beijing, best known as the site of the Mountain Resort, a vast imperial garden and palace formerly used by the Qing emperors as summer residence, aims to become international tourist city. It is phased to become an extra-large city with the population of over 1 million in 2020.
 - Zhangjiakou, bordering Beijing to the southeast, best known by its critical transport node for travel between Hebei and Inner Mongolia and connecting northwest China and Beijing, aims to build regional center city and ecological tourist place with a population of over 2 million in 2020.
 - Langfang, located approximately midway between Beijing and Tianjin and bordering Baoding to the southwest, Beijing to the north and Tianjin to the east, is the smallest prefecture-level division in Hebei province by land area. It intends to adjust the administrative zone, promote the urban development with different parts of districts and incubate it become the regional growth pole for the whole mega-region area.
 - Baoding, bordering Beijing to the northeast and Shanxi to the west, aims to establish capital modern infrastructure and high-tech base, national historic and cultural city and national low-carbon experimental zone, aims to achieve over 2 million population in 2020.
- The second is the strategy to develop new towns. The planning proposes a series of new towns in PBTHA to construct the public transportation and railways by two sides.

- The third strategy is to improve the quality of the urbanization of the towns and counties from the below. Counties and towns are considered the bottom-up engine for the urbanization from below. The planning proposes to improve the construction of the towns and counties through different channels, including increasing the public transportation and public facilities, promoting the upgrade of the industries.

3.2 Regional Spatial Strategy

Due to the different distribution of regional resources, the planning stipulates a spatial development strategy, which is centered to build multi-layer spatial development framework and adopt a diverse strategy to different cities. The establishment of the multi-layer spatial development framework is based on the transportation corridor.

In the first place, the regional spatial strategy is centered on the spatial strategy of Beijing. Concerning that Beijing intends to develop along the transportation corridors towards the east and north side, the first layer is centered on Beijing metropolitan region, called commuter ring. It includes the towns and counties within a radius of 30 kilometers of East fourth Ring Road and the North Fourth Ring Road. The first layer served for Beijing and the spatial structure is transitioned from the corridors-led to network. The layout is consistent with the urban transportation of center city of Beijing.

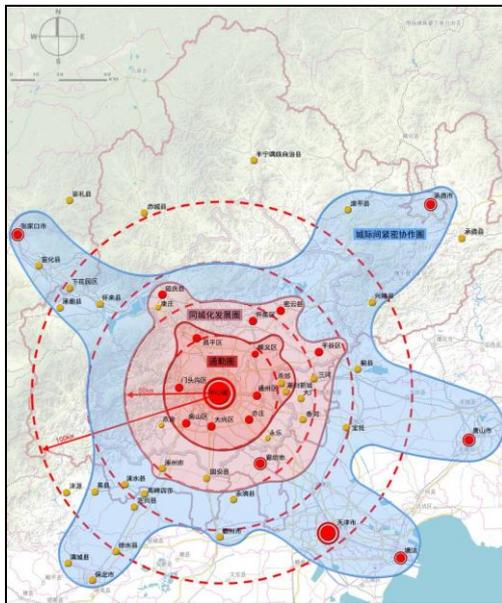


Figure 11: Regional Spatial Layout

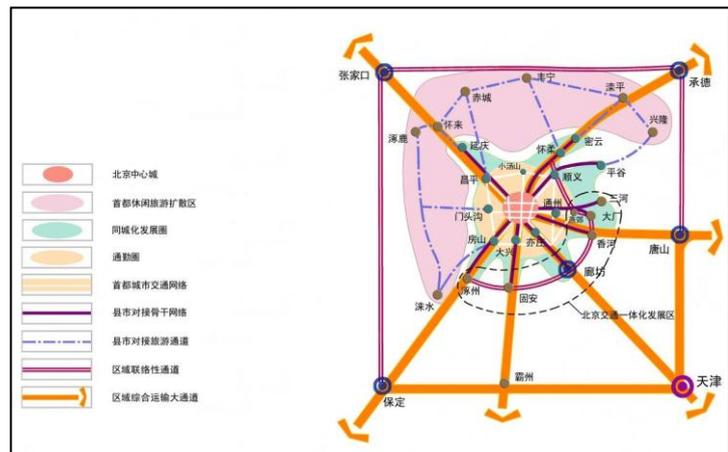


Figure 12: PBTHA Transportation Spatial Structure

The second layer is the city development circles. It is extended 20-25 kilometers out from the commuter ring. It allocates the new towns and those core nodes to serve for the capital. It serves for the transportation of Beijing and reinforces the main roads connection between those new towns and Beijing to avoid the outside sleeping cities.

The third layer is inter-city cooperation circle, which is centered within a radius of 70 kilometers and extended to a radius of 150 kilometers to Beijing, Tangshan, Baoding, Zhangjiakou and Chengde-which serves for the industry transition and commercial and logistics connection. It depends on the inter-city transportation and extends along Beijing six radial integrated transport corridors and distributes outside center cities and professional integrated nodes.

The fourth layer is Jingjinji North integrated development zone, which is based on a radius of 150-200 kilometers and covered those metropolitan areas to promote the competitiveness of capital city area.

Generally, the whole spatial structure will be formed as the figure 12 shown.

3.3 Environmental Protection

The planning stipulates a series of measures to promote environmental protection to achieve sustainable development. The most important part of the planning is to phase an ecological planning protection structure (Figure 13), which is structured by green screen-corridor-ring. Green screen is to protect and restore those northwestern mountains, water conservation areas, and to reinforce the protection of natural protection areas and forests to protect the regional ecological security barrier.

The green corridors are six main rivers from the mountains to the plains to protect the river ecosystem of water and improve the water landscape.

The green rings are those green ecological corridors, serving as the significant ecological isolated belt to effectively improve the spatial environment of the PBTHA mega-region.

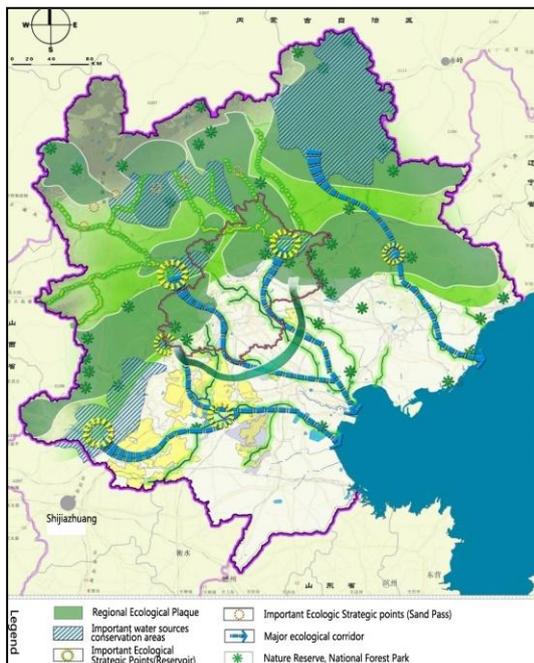


Figure 13 UBTHA Cross-boundary Ecological Protection Planning Structure

3.4 Cross-boundary Infrastructure Construction

The planning also proposes cross-boundary infrastructure construction plan to serve for the whole region. A series of railways, airports, highways are proposed in the infrastructure parts. Under the plan, it aims to establish a series of transportation hubs, including international gateway hubs, national transportation hubs, regional transportation hubs and regional connecting hubs. International hub includes Sanhe and Dachang, which are within the international airport serving area and Langfang, Guan, Yongqing, Zhuoahou, which are within the second international airport serving area.

National transportation hubs are those national stations which serve for national highways and high-speed railways, including Beijing station, Beijing south station, Beijing west station, Beijing north station and Fengtai station.

Regional transportation hubs include those five hubs, Tongzhou, Langfang, Baoding, Chengde and Zhangjiakou, which act the regional transportation services.

Regional connecting hubs include those new towns to serve for the connecting hubs.

The cross-boundary infrastructure system serves for the cross-boundary region to form a systematic transportation structure as figure 14 shown.

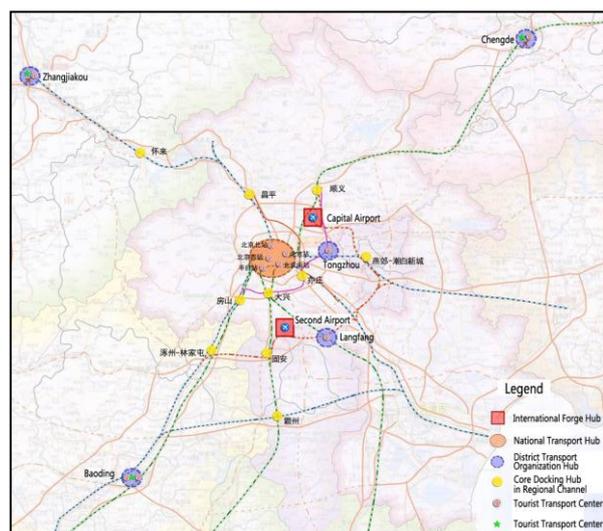


Figure 14 UBTHA Cross-boundary Systematic Transportation Structure

3.5 UBTHA Mega-region Planning Spatial Structure



Under the strategy proposed above, the planning stipulates a spatial structure for the mega-region area, characterized as one-center, four-cores, six-axes, four-zones and multi-points (Figure 15). One core is Beijing-centered and four cores are Baoding, Langfang, Chengde and Zhangjiakou, four regional cores. Six axes are six developmental corridors. Four zones are four growth poles in peri-capital areas. Multi-points include those industrial parks and towns. The spatial structure of the UBTHA identifies the main cores and nodes to serve for the whole regions.

Figure 15 PBTHA Spatial Structure

3.5 Cross-boundary Mega-region Governance

In the final part of the planning, it proposes to organize cross-boundary commissions to put forward the implement of the plan. It proposes

the State Council to act as the leaders and governed by the central ministries and Beijing, Tianjin and Hebei provinces. It also proposes a bottom-up approach from the market to the state. A series of policies are suggested to implement the planning, including the establishment of experimental zone to reinforce the cooperation and public fund for particular cross-boundary environmental protection projects.

4. Assessing

The planning is still undergoing, thus it is hard to evaluate the performance of the plan implementation now. However, it could be assessed the planning scheme process. The first experience is that the cross-boundary mega-region planning is an important instrument for building competitiveness and sustainable development of the whole region. Although cooperation is reinforced during the planning scheme, there is much competition in the cross-boundary region and cooperation is rare. With the accelerated urbanization of Beijing, a series of urban problems have emerged, including server urban transportation, environmental pollution, urban explosive expansion and etc. On the other hand, the lagged economic condition of Hebei has not benefited from the proximity to Beijing. Moreover, it causes a series of vicious problems to the whole regions. Thus, the development of the PBTHA cities have become the core issues of the development of the whole region. However, the planning is proposed by the provincial government of Hebei. The political power of the provincial government is hard to compete with the government of Beijing, the national capital city. Thus, it calls for the central government from the above to coordinate the cross-boundary issues and put forward the implement of the planning. Moreover, the phase of the planning is intended to act as a negotiation platform for both sides to discuss the cross-boundary issues of the regions in post-reform China. Thus, a bottom-up approach is still needed in the implementation process and an effective coordinating mechanism among cities for plan implementation should be further introduced and put forward and the items specified in the plan should be materialize though the involvement of central government into concrete actions.

5. Conclusion

In the western world, city-regions planning are considered effective instruments for situating the institutions of post-Fordist economic governance (Scott et al., 2001). Cross-boundary planning are also important arenas for city and regional to negotiate and cooperate in different spheres. The paper uses a case of PBTHA cross-boundary mega-region planning to probe in to the significances and difficulties of the planning. The contributions and main points of the planning have been discussed and the implementation and experience has been elaborated. Several lessons could be learnt from the planning. In the first place, regional inequalities lead to the uneven development of the whole area. Poverty alleviation, environmental protection and cross-boundary infrastructure construction are three important issues needed to be solved in the planning process. Another experience is that the cross-boundary regional government relies on the effectiveness of the power of central government. The up-bottom approach will be needed. A powerful coordination from above will be effective in the implementation. Although the provincial government should play an enabling role in the regional coordination, the higher-level government should also launch some concrete initiatives to put forward the implementation process. Thirdly, the successful of the planning is the establishment of an urban forum which may serve as the platform for member cities to share their views and visions on the development of the region. The planning offers a platform for the Hebei province to call for the preferential policies to further promote the sustainable development for the whole region.

1. [Electronic resources] <http://baike.baidu.com/view/4689714.htm> quoted June 29 2013.

References:

- Gao, R (2004) Study on economy development of Shanghai metropolitan area. *City* 3, 14–18.
- Lin, George. C. S. "Metropolitan development in a transitional socialist economy: spatial restructuring in the Pearl River Delta, China." *Urban Studies* 38.3 (2001): 383-406.
- HBSB (Hebei Statistical Bureau) (2003) *Statistical Yearbook of Hebei 2003*. China Statistical Publishing House, Beijing.
- Luo, Xiaolong, and Jianfa Shen. "Why city-region planning does not work well in China: The case of Suzhou–Wuxi–Changzhou." *Cities* 25.4 (2008): 207-217.
- Qian, Y and Xie, S (2004) To promote the competitiveness of metropolitan region to achieve its sustainable development. *East China Economic Management* 18, 4–7.
- Scott, J, Agnew, J and Soja, E W (2001) Global city-regions. In *Global City-regions: Trends, Theory, Policy*, A J Scott (ed.), pp. 11–30. Oxford University Press, Oxford.
- Yang, Daniel You-Ren, and Hung-Kai Wang. "Dilemmas of local governance under the development zone fever in China: A case study of the Suzhou region." *Urban Studies* 45.5-6 (2008): 1037-1054.
- Zou, Deci. "The Necessity of Urbanization in China and Its Challenges." *Urban Planning Forum*. Vol. 4. 2010.
- Zhang, W (2003) The basic concept, characteristics and planning of metropolitan regions in Jiangsu. *City Planning Review* 27(6), 47–50.
- Zhou, Shangyi, Juncheng Dai, and Jianhua Bu. "City size distributions in China 1949 to 2010 and the impacts of government policies." *Cities* (2013).

Zhongguancun Cottage Redevelopment: Prospects for Low-Middle Income Housing

Tamara WHITE and ZHOU Jinnan

China Academy of Urban Planning & Design

Introduction

China is experiencing a wave of transformation, with an unprecedented speed and scale of change in the economy, demographic flows, built and natural environments, and socio-cultural mores. This has enormous impact on the country's housing system, particularly in China's fast growth cities.

This paper explores several aspects of low-middle income housing, amidst the pressures of China's sweeping changes. It provides a historical context of housing privatization, market reforms, and government regulatory measures. Elements of the modern housing system, as pertain to low-middle income (LMI) households, are then presented: current LMI housing strategies, market conditions, and policy and programming frameworks. The discussion is then grounded in a study of the Zhongguancun Cottage Redevelopment in Haidian District of Beijing. Zhongguancun is a dynamic and strategically important growth area, with steep competition for land uses and redevelopment funds. We offer some recommendations for preserving and producing LMI housing at this local level.

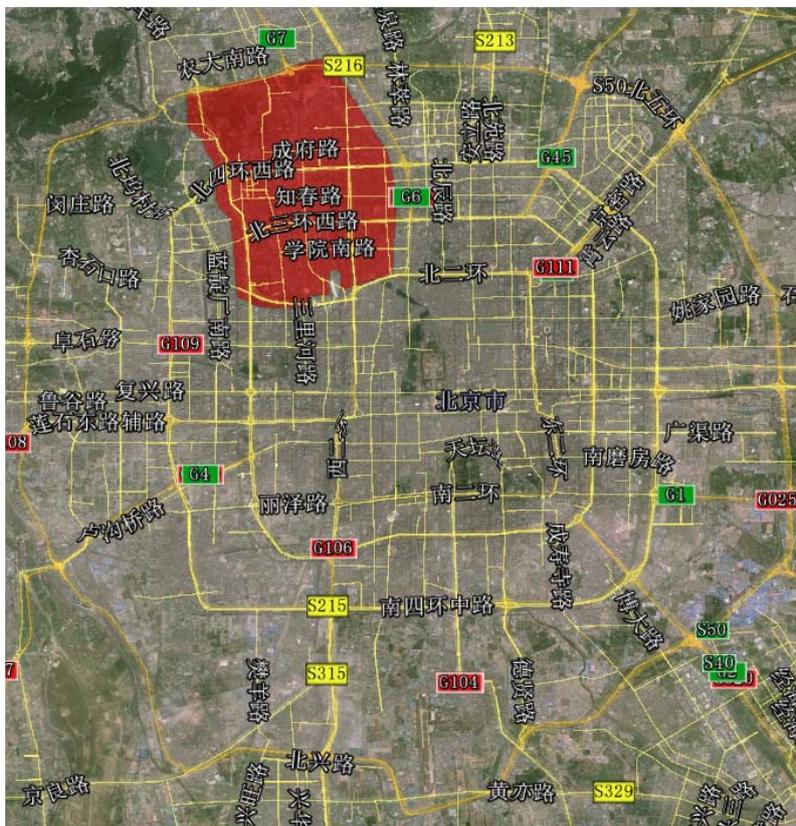


Figure 1: Haidian District, Beijing
Source: Google Earth

Conversion Note

1 sq.m. = 10.8 sq.ft.

100 yuan = 16 USD

China's Housing System and Market Reforms

China's housing system has undergone a complete metamorphosis over the last thirty years. Under Mao Zedong, housing was provided by the work unit – *danwei*—to the vast majority of society. Following Mao's passing, political leader Deng Xiaoping ushered in a sweeping Reform Era, that brought about the "Open Door" policy and a socialist market economy. With this came a gradual, then explosive transition to commercialized housing, now strongly based in private home ownership and market provision. This process has been referred to as "probably the largest neo-liberal reform project ever implemented in the world" (Wang, *et al*, 2012:356). In 1981, over 80 percent of urban housing was in public ownership. Within two decades, over 80 percent of public housing had been sold, "mainly to their occupiers" (*ibid*: 345). While overall physical housing conditions (quality, services, and overcrowding) have improved since housing reform (Zhang, 2011:234), these improvements have been experienced unequally across the income classes.

The market transition process has had its share of problems. Massive housing speculation, housing inequality, residential segregation, and large-scale evictions mar the housing landscape in many of China's cities (Cook, 2013:10; Yang and Wang, 2011:386; UN-Habitat, 2012:129). There is a stark mismatch between the housing needs of most urban residents and the types (and prices) of housing offered by the market. Some scholars contend that there is now "[an] overdependence on the urban housing market as the major provider of housing" (Chen, *et al*, 2011:7).

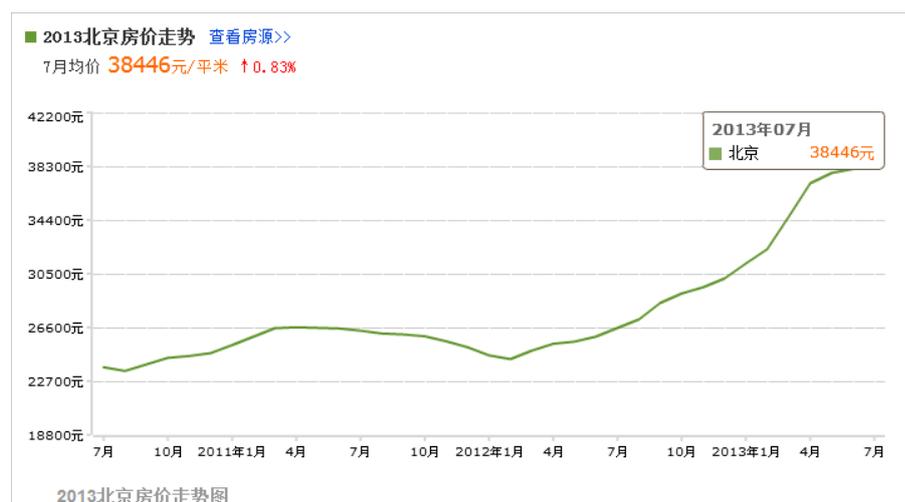


Figure 2: Beijing Housing Price, over past three years

Source : Anjuke Beijing, 2013. <http://beijing.anjuke.com/> (a real estate transaction network)

Over the last decade and a half, housing prices have skyrocketed. At 2011 house prices in Beijing, "It would take a person earning the average salary 50 years to save enough money to buy a 100 square meter apartment, assuming he saved every penny he earned" (Wang and Qin, 2011:1). Figure 2 displays the trend over just the last three years: a 60 percent increase in sale price per square meter.

Chinese housing policy has clearly reached a critical stage in which free market mechanisms must be more equally balanced with growing public needs. Though the central government has regularly attempted to curb speculation and guide the housing system with a series of incentives, restrictions and regulations over the years, the capitalistic pursuits of developers, housing investors, and the government itself have proven difficult to subdue. (Note: local governments may earn a large portion of their revenue from land sales to developers.)

In addition to the transition to a market-based system and the speculative frenzy that ensued, the demographics of Chinese cities are in major flux. Mass migration from the Chinese countryside and an influx of foreign nationals, have placed added stress on urban housing systems and have increased the complexity of housing planning and provision. There is currently a substantial knowledge gap “regarding urban housing demand from low-income urban families and rural-urban migrant workers in the urbanization process” (Chen, *et al*, 2011:1).

Under-housed Populations

A variety of urban populations are widely considered to be under-housed. The “floating population” or *liudong renkou* is comprised of mostly low-skilled rural-to-urban migrants who have limited access to urban services, due to China’s *hukou* system which was intended to restrict population movement. The floating population is “usually excluded from urban population statistics” (Chen, *et al*, 2011:3) and faces “major barriers to full participation in the housing market” (Cook *et al*, 2013:7). According to a 2008 Beijing Bureau income survey, migrants earned an average of roughly half that of local Beijingers (Zheng *et al*, 2009:435). Due to limited income and a desire to save for remittances, migrants commonly live in overcrowded arrangement, often with less than 10 square meters of space per person (Deng *et al*, 2011:177). Many migrants find housing in urban villages, discussed in the following section. Other housing strategies include living in overcrowded market-priced apartments, or in illegal basement and rooftop homes. Very little research has been conducted on households living in these latter arrangements.

Young college graduates are another population that is commonly under-housed. Occasionally referred to as “the ant tribe”, these educated young professionals are simply out-priced from the housing market. Like migrants, they too tend to “concentrate in urban villages, often in ‘edge city’ developments” (Cook *et al*, 2013:11) and in high density living arrangements. Still other populations, such as inner city residents in old and poorly serviced settlements (like *hutongs*, or low-rise alleyway neighborhoods) and apartment dwellers, living in low-quality mid-rise blocks from the Maoist era, have special housing improvement needs.

Collectively Owned Urban Villages and Inexpensive Housing

China has a unique dual land ownership regime in which rural and urban lands fall under different administrative and governance systems. Rural areas are collectively owned, while cities (at least initially) exist on state-owned land. This seemingly clear distinction, however, has been blurred with the demographic and economic shifts of the last few decades. As urban areas swelled following the Open Door policy, they engulfed rural villages in the peri-urban areas. Some were administratively absorbed into the city proper, while others retained their rural status, and distinct legal and governance structures. These areas are sometimes referred to as *chengzhongcun* or “village within the city”.

Collectively owned lands represent a significant and growing proportion of potential construction areas within Beijing. In fact, in 2010, the total land area of construction-ready collective land (1540 sq. km.) exceeded the total area of state-owned construction-ready land (1230 sq. km.) (Beijing Master Plan (2004-2020) Implementation Evaluation Report, 2010:12).

Collectively owned lands are already a major source of low-middle income housing in Beijing, especially for LMI populations who seek very low rents. But there are many legal

grey zones surrounding the collective lands or villages, which operate under somewhat collective ownership with restrictions on land uses and sales. While it is common practice to rent residential space to those outside of the collective, its legality is dubious at best.

Living conditions are typically cramped: A 2007 survey found that “the mean per capita living space is 8.2 square meters, less than one-third that of Beijing’s formal housing sector (27.0 m²)” (Zheng *et al*, 2009:434, referencing Beijing Bureau, 2008). Basic facilities and services are also often lacking: “With these compact living spaces 90% of [residents]... don’t have bathrooms or kitchens, 86% don’t have heating, and 93.3% don’t have air conditioning” (Zheng *et al*, 2009:432).

The villages’ relationships with adjacent municipal governments also vary widely. With a toolbox of carrots and sticks, municipal governments often exert some planning and development pressure on the villages. But, entrepreneurial villagers who have “found themselves in possession of prime land for migrant worker rental... respond rationally by maximizing the yield of their [land] assets. Self-built high density is thus the norm rather than exception in [these] areas” (Wu *et al*, 2012:7).

These urban villages are under major threat of redevelopment, in which informal landlords make “windfall gains” and renters (largely migrants) are displaced (Wu *et al*, 2012:4). As of 2008, compensation to villagers was calculated as “six to ten times the average annual output of the farmland in the previous three years”, plus relocation cost and additional compensation based on household size (Wu *et al*, 2012:6, referencing: Tian, 2008; Zhao and Webster, 2011). However, such compensation may still fall short of the rents amassed from owning a dense bundle of substandard apartments. In fact, rental rates within urban villages are nearly that of the surrounding market prices, per square meter: “On average, rent per square meter in adjacent formal rental housing is only 1.23 times that of urban village housing” (Zheng *et al*, 2009:436). Hence, many villages “resist any formal development control by the municipal government over the use of their land and in some cases to resist urban redevelopment” (Wu *et al*, 2012:9).

Redevelopment has serious consequences for the housing security of the LMI populations who access this unique housing form. Further, there may be negative repercussions for local economic vitality: “the dominance of the beautification and modernization narrative in discussions about urban village redevelopment is rarely balanced with a discussion of the opportunity cost to the local economy of removing the main source of low-cost homes” (Wu *et al*, 2012:13).

Government Low-Middle Income Housing Programs

As previously mentioned, the formal market is now the primary mechanism for housing provision in China. However, for those in the low-middle income (LMI) classes, the market has done very little to supply appropriate housing. The term “LMI housing” will be used broadly herein to refer to housing types accessible to low-middle income households (as defined by local income categories). This includes housing provided through urban villages and government-supported housing. Further housing strategies, such as overcrowded living in market rental units, and informal settlement are pursued by LMI households to varying extents in different cities.

Though the government has privatized the housing system, it has continued to produce policy documents that detail plans for LMI housing provision through market mechanisms and publicly supported programs. The scope and objectives of these plans have, however, been reduced over time. Development restrictions aimed at limiting housing costs have

been enacted. For example, since 2006, it's required that every development devote 70% of its finished space to units less than 90 square meters (Deng *et al*, 2011:177). However, given high costs per square meter, this form of housing is still unaffordable to LMI populations.

Several federal programs, called *bao zhang fang*, exist to support LMI housing. Two rental programs (Public-Rental Housing; and Low-Rent Housing) providing mostly-publicly-owned housing, and subsidized market rentals, respectively. Two other programs (Economical and Suitable Housing; and Capped-Price Housing) support home ownership through substantial subsidies, unit size restrictions and developer profit caps. Also, the Housing Provident Fund "is a compulsory housing savings program in which both employers and employees contribute a certain percentage of the employees' salaries" which may be withdrawn for home purchase, home improvement, or self-construction (Deng *et al*, 2011:174). Additionally, all capital gains from this fund must be reinvested into Low-Rent Housing (*ibid*:177).

The central government's principal policy document, The Twelfth Five-Year Plan, dedicates 619 billion yuan to help build and acquire 36 million units of LMI housing units, and puts new emphasis on the importance of rental housing forms. If the government meets this target, then "social housing will be available for 20% of urban households, compared with about 7% today" (Wharton, 2011:1). However, the Ministry of Housing and Urban-Rural Development (MoHURD) estimates that the central government's dedications will only cover a fraction of the cost of production (*ibid*:2). Local governments are expected to pick up the balance.

Herein lies one of the primary pitfalls in China's LMI housing policies and programs: inordinate responsibility is placed on local/district governments to finance (through land gifting and other subsidies), facilitate, and regulate LMI housing production and allocation. In 2011, though local and central governments each collected roughly 50% of government revenue, local governments made 85% of the reported expenditures (China Statistical Yearbook, 2012). In terms of "housing security" expenditures, local governments contributed a whopping 91% of the proportion (China Statistical Yearbook, 2012). However, local governments have very few real incentives to support LMI housing, as one of their principal sources of revenue (perhaps up to 50-60%) is derived from market-priced land sales to developers and associated fees and taxes, under the state-controlled land market (Wharton, 2011:1; Wang, *et al*: 2012, 355).

Developers also have little incentive to become involved with LMI housing production. Profits are lower, market changes are rapid, and frequent government policy adjustments provide a risky and unattractive business environment. "Only 30 out of 100 developers participated in [LMI] housing projects between 2007 and 2010," according to a report on the corporate social responsibility activities of China's real estate companies by MoHURD (Wharton, 2011:2).

Since the Reform Era, LMI housing programs and plans have rarely been fully achieved, due to lack of stable funding, lack of incentives, and little enforcement. Though total housing construction has swelled over the last decade, less government-supported LMI housing was constructed in 2010 (just under 400,000 units), than was in 2000 (more than 600,000 units). In 2000, 28% of all housing units constructed were government-supported LMI housing. By 2010, the percentage had dropped to just 7% (Wang *et al.*, 2012:348 and Cook *et al*, 2013:11).

	Target of Beijing's Five-Year LMI Housing Plan (2006-2010)	Actual Achievement
Public-Rental Housing	no target value	1.5 million sq.m
Low-Rent Housing	1.5 million sq.m	1.1 million sq.m
Economical and Suitable Housing	15 million sq.m	10.1 million sq.m
Capped-Price Housing	15 million sq.m	16.9 million sq.m

Figure 3: Progress of Beijing's LMI Housing Programs

Source: Liao Zheng Xin, 2012

Beijing's LMI Housing Commitments

Beijing is a rapidly growing city of over 20 million residents that is gaining an average of 600 thousand newcomers per year. Within Beijing's tight land market, low-middle income housing is in high demand and low supply. As shown in Figure 2, the city's housing prices have exploded. Several government programs and regulations work to provide low-middle income housing (both rental and ownership models), however results have been insufficient when compared with levels of demand.

In Beijing's newest Five-Year LMI Housing Plan (2010-2014), the Municipality outlines general strategies for promoting LMI housing stock and makes concrete land and financial commitments to LMI housing through budgetary expenditures and development dedications. Several methods for promoting LMI housing stock are proposed, including 1. Mixed-Use residential with manufacturing; 2. Encouraging companies to develop employee housing; 3. Buying investment- and other vacant properties, and 4. Placing increased emphasis on promoting rentership over ownership housing forms.

Beijing has committed 8 square kilometers of land for LMI housing projects in 2013, and has "pledged to start building 160,000 affordable housing units" (Zhang, 2013:1). The Plan further outlines general land development stipulations: 30% of units in new developments, 50% of land converted into residential use and 10% of local governments' land resale profit should be dedicated to LMI housing (Beijing People's Government, 2010b). Though these appear to be strong policy measures, the compliance with and effectiveness of these regulations remain unclear. Beijing's real commitment to LMI housing is certainly questionable: within the Beijing region, only 1.7% of the general budgetary expenditures were allocated to housing security, compared with an average of 3.8% when considering all of China's regions (China Statistical Yearbook, 2012).

Much of the responsibility for actually implementing the Plan has been delegated to local districts, which are also required to develop their own District LMI Housing Plans. The Beijing Municipal Land Bureau has announced that districts must complete 70 percent of their annual plan during the first half of the year, "and those who cannot meet the requirements will be suspended to develop the land" (Zhang, 2013:1). The Ministry of Housing and Urban-Rural Development has further called upon local authorities to innovate new ways of financing and expanding low-middle income housing, in line with the country's history of "gradualist and experimental" housing reforms, based in "trial and error" (Deng *et al*, 2011:168).

Applied Study: Zhongguancun Cottage Redevelopment in Haidian District

Introducing Haidian District

While population growth has certainly spurred an outward expansion of the Beijing's footprint, there is now a major focus on infill and redevelopment. One of the major districts slated for redevelopment is the Haidian District in northwest Beijing. With a booming economy (its GDP has tripled over the past decade) and a burgeoning population (see Figure 4), Haidian is faced with both accommodating new growth and improving the quality of the urban environment and services (Haidian Bureau of Statistics, 2012). While we authors recognize that redevelopment is a highly contentious issue which can involve large-scale eviction of residents, we also understand it as a common structural element of land development in urban China. As such, this makes for a good applied study case, with potential recommendations and implications for other redevelopments.

	2004	2005	2006	2007	2008	2009	2010	2011
Population (10,000 persons)	249	258	269	281	293	308	328	340 *(150 are migrants)
Non-Natural Growth Rate (Immigration) (10,000 persons)	31.2	41.7	-9.3	19.8	25.5	23.3	18.0	24.9
Households Dismantled & Removed					2112	5070	2074	2352
# Sets of Rental Housing					4879	4927	2934	1061

Figure 4: Haidian District Statistics

Source: Haidian Bureau of Statistics. 2012. *Haidian Tongji Nianjian* (Haidian Statistical Yearbook).

This compilation of officially-published statistics clearly shows that Haidian is a district experiencing rapid change. We see steady population growth, with a 44% migrant population as of 2011. The non-natural growth rate has fluctuated wildly, and even flipped directions in 2006 (perhaps due to a large scale removal effort). Again in 2009, we see a major increase in household clearance. Further, over the four years of data provided, it is apparent that the net supply of rental housing has seriously declined (though the unit of measurement is unclear). Unfortunately, clear and accurate data on LMI housing stock in Haidian were not available for this study. Certain inferences may be made, though, for example presuming that a large percentage of the rental stock is home to LMI households. And while owners of households that are dismantled and removed through redevelopment receive compensation in the form of new apartments (sometimes multiple) and remuneration, renters of such apartments have no recourse. Also, it may be presumed that the myriad informal arrangements that provide housing to LMI households are not likely to reappear in new formal developments.

Haidian District's Housing and Construction Committee is the principal entity responsible for the low-middle income housing sector within the district. They are certainly faced with many challenges associated with the retention and production of LMI housing amidst massive redevelopment plans and population growth. However, there are also many opportunities. The Committee may act to balance redevelopment pressures with the (growing) public's growing housing needs. This may include mitigating the impacts of redevelopment evictions and inserting LMI housing as a priority use for newly acquired redevelopment lands.

The District does have stated LMI housing objectives: The District's Five-Year LMI Housing Plan includes securing 75,000 units (average of 15,000/year) at a total of 7 million square meters (average unit size of 93 square meters). Rentals are intended to comprise 60% of these units. As of 2012 (over 2 years into the Plan) only 14,000 units had been created, including 5,000 rentals and 9,000 under ownership (well under the 60% rentership guideline). In government statistics, both compensation apartments and new LMI housing are bundled into the same category. So, while it is difficult to discern true net increases in LMI housing, it can be deduced that 50% more land area is dedicated to compensation apartments than is to publicly-supported LMI housing in Haidian District (Beijing Municipal Bureau of Land and Resources, 2013:1).

Within the current land development regime, it is observed that the Haidian District is disincentivized to retain existing LMI housing in low density sites. Low-density areas are principal targets for local government purchase, as they would logically require lower levels of compensation than other areas, because there are fewer units. Given the rapid rise in land values, there is also incentive to purchase properties hastily. Furthermore, as compensation apartments for removed residents count towards a district's LMI housing construction goals, there is further incentive to simply expand removal efforts.

Introducing Zhongguancun

The Zhongguancun area of Haidian District in Beijing was used as a study case, to assess some of the issues and opportunities associated with LMI housing provision. Zhongguancun is a dynamic and strategically important growth area, with steep competition for land uses and redevelopment funds. What follows is a description of the Zhongguancun context, and a list of LMI housing solutions, that we propose for trial application in the Zhongguancun redevelopment area. These recommendations were developed through a review of applicable area plans, including proposed area redevelopment plans; a review of literature on China's low-middle income housing programs and funds; semi-structured interviews with experts in Chinese low-middle income housing development and development finance; discussions with sub-district leaders, and; site visits.

Within Haidian, the Zhongguancun area is 75 sq.km. and includes universities and research institutes (65% of the core land area), collective lands (11% of the core land area), expanding manufacturing zones, and a growing cluster of IT, high-tech, and creative industries. It is home to 1.2 million residents (including 33.8% migrants and 24.8% college students), with a population density of 22 thousand people/sq.km.

Within the Zhongguancun area, the government has identified a number of strategic priorities that it seeks to address through a major redevelopment program that will roll out over the next few years. Primarily, a strong emphasis has been placed on facilitating and spatially accommodating economic development activities. There is also a push to improve quality of life in the densely populated city, which is (arguably) overbuilt in many areas, including development on environmentally sensitive lands. In these areas, the city government wishes to insert parks, public services and amenities, and improve connectivity and emergency vehicle access through road development. We (the authors) also see this

redevelopment project as a great opportunity to strategically address low-middle income housing needs and meet official government housing objectives.

The Zhongguancun Cottage Redevelopment project is in fact already underway. Planning, rezoning, and the clearance of present uses and residents are all taking place concurrently. Sixty-four sites, including many low-rise residential sites (building with 5 or few stories), have been identified for clearance.

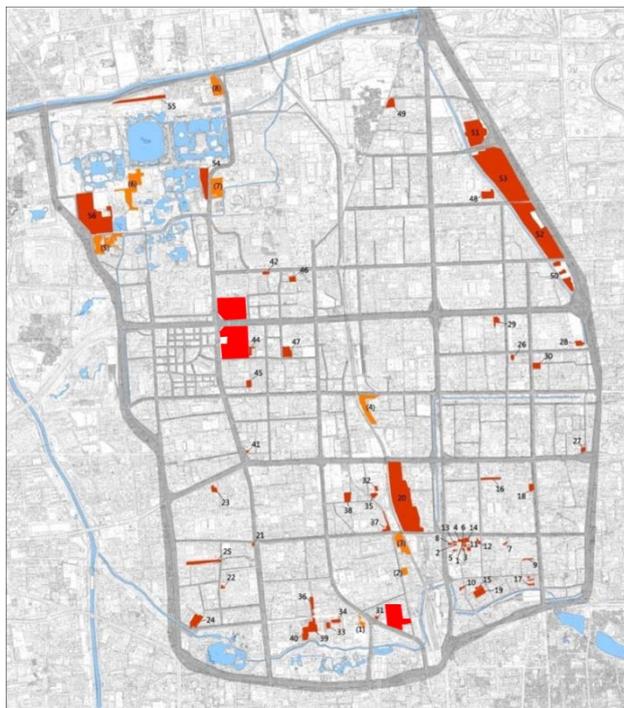


Figure XX: Identified Zhongguancun Cottage Redevelopment Sites
Source: China Academy of Urban Planning & Design, 2013.

Local Solutions to Improve Low-Middle Income Housing Supply

There are many potential policies and plans of action that could promote LMI housing retention and production within the Zhongguancun redevelopment area. Layers of development regulation and public finance reform at the central and municipal levels would indeed have an enormous impact. However, this section focuses on actions that are within the control of the district government.

These recommendations would require local government officials to take a very proactive role in directing, facilitating and collaborating on a variety of LMI housing initiatives.

We recommend that the Haidian Housing and Construction Committee focus their efforts in the following eight areas: 1. further research of local LMI housing needs; 2. stricter conformance with existing development regulations and revenue dedications; 3. a standardization of the discretionary elements of the development approval process; 4. the preparation of targeted and well-orchestrated developer deals; 5. preservation of existing rental stock; 6. collaboration with collectively-owned villages; 7. expansion of student and workforce housing, and 8. experimentation with developer-operated LMI rentals.

There must be a clear assessment of the district's current and projected LMI housing needs. To date, housing construction objectives have been made to be generally in compliance with municipal objectives, but without a strong understanding of local housing demand. Future

housing plans should be in alignment with demographic trends and the strategic development trajectory of the district. Information on the types of LMI sub-populations and household structures will help tailor housing plans and programs. While this knowledge gap is not a major issue at the moment (because *any* form of well-located LMI housing will be filled immediately), housing programs will need to become more targeted and refined over time.

Many improvements can be made within the existing policy and regulatory structure. The District should review its current policies and plans for conformance with local, municipal, and central LMI housing guidelines and regulations. According to central and city government, the following should be dedicated to LMI housing: 30% of units in any residential development; 10% of profit from local government land sales; and 50% of land area in any newly designated residential zone. Local conformance with these regulations has lacked clear documentation and anecdotal evidence points to a lack of enforcement. The District's current Five-Year LMI Housing Plan is also not in accordance with the Beijing municipal guidelines restricting unit size (in an attempt to limit sale price). The District's housing plans include the production of units with the average floor space of 93 sq.m., which is well above the 60 sq.m. guideline stated in the Beijing LMI Housing Policy (Beijing People's Government, 2010b). Units of this size are not affordable to low-middle income households. A more appropriate plan would increase the number of units, while retaining the same (or more) total floor area. Greater enforcement and transparency on these measures would surely support increased LMI housing production.

Haidian District government may also be more proactive in designing LMI housing deals that are attractive to developers. This may include bundling or packaging sites into single deals that provide developers with access to coveted properties, while also securing substantial levels of LMI housing production. Additional developer incentives may also be offered, such as increased FAR, lower land prices, waived development fees and taxes, and streamlining development processes. However, as these incentives are already common elements in standard development negotiations, they wield limited power in leveraging LMI housing production. Local government may consider formalizing and standardizing the discretionary elements of the development approval process. In this way local governments can achieve more leverage when offering easements or perks as incentives for special cases, such as the development of LMI housing stock.

There must be a more thorough consideration of the rental housing stock, with careful planning to both retain current stock and promote increased future stock. In accordance with the Beijing Five-Year LMI Housing Plan, as well as the Haidian District Plan, rentership must be promoted as an integral housing form. Yet, rental units are quickly disappearing. As of the 2012 update on Haidian's progress towards its Plan, the proportion of rentals produced (versus owner-occupied units) is well below the projected 60% mark. At the very least, local government policies should support the replacement of housing forms that have been removed. This means that when rental housing is removed, it should be replaced with nearby rental opportunities at similar cost and (ideally) a prioritization of placement for removed renters.

To help preserve existing rental stock, local officials may also choose to reconsider the purchase of select redevelopment sites. Through a calculation of site densities, land acquisition costs, land sale prices, and maximum allowable FARs, we have identified several sites for which dismantling and removal should be reconsidered. These sites are expensive to acquire (with current FAR exceeding 1), small (less than 10,000 sq.m.) and unattractive to developers, because of the difficulty of construction.

Further, local officials may consider delaying the clearance of housing on newly acquired sites. Instead of immediately clearing all sites that transfer into local government ownership,

we recommend that the government consider retaining rental units on sites with a high proportion of rentals and temporarily transferring them into a public rental regime. This would allow many residents to remain *in situ* until perhaps other rental options are developed. In the meantime, the local government's ownership of the property has already been secured and values are accumulating, should future redevelopment be desirable.

Collectively owned village lands offer a unique opportunity for local officials to collaborate with village residents on LMI housing provision. Officials may encourage the improvement of the environmental quality and safety of current LMI housing, while partnering with villagers in the construction and management of public rental housing. In myriad past cases, village redevelopment has almost always meant an expulsion of the low income renter population. So, special safeguards must be put in place to ensure that massive displacement does not occur. It is helpful to note that migrants currently pay almost market rate per square meter (Zheng *et al*, 2008). The important element would be to create rental units with appropriate size to meet the affordability requirements of these individuals and households. Housing could include communal facilities and amenities, with privacy partitions that may be removed over time, should the conditions of the housing system change.

Student and workforce housing should also be avidly pursued. On low-density university-owned lands (such as the Zhufangcun site of Beijing University), universities should be encouraged to produce housing to meet the needs of students, professors, and staff. When universities have knowledge development partnerships with start-ups or other small enterprises in IT, high tech, and creative industries (as is commonly the case in this district), they should be further encouraged to support housing development for their employees. Design competitions may be held to stimulate innovative thinking and build awareness around workforce housing, university housing, and migrant housing. Such competitions have been conducted elsewhere with great success.

Finally, the District may wish to partner with developers that are interested in managing buildings for LMI rentals. As the supply of developers has saturated the local demand for development services, many are exploring related sideline business ventures. The Beijing government has expressed interest in pursuing this strategy. However, there would need to be close regulation of rental prices, to ensure that the units are actually serving LMI households.

Within the Zhongguancun Cottage Redevelopment, ample opportunity exists to promote LMI housing through improved conformance with current policies and regulation, more proactive dealings with developers, universities and urban villages, and innovative and experimental arrangements. The overall structure of Chinese government, and its role in the land market and the banking industry provide a unique combination of traits that could, if wielded correctly, bring about fantastic improvements in low-middle income housing provision. Housing policy is maturing over time. Market shocks and distortions are being incrementally addressed. However, structural changes in local government finance, stricter enforcement of existing development regulations, and reliable LMI funding mechanisms are needed in order to bring about deeper and lasting change in LMI housing provision.

References

- Anjuke Beijing (2013) Beijing home sales price trend (2010-2013). Accessed at <http://beijing.anjuke.com/> on 17 July, 2013.
- Beijing People's Government (2010) Beijing Master Plan (2004-2020) Implementation Evaluation Report.
- Beijing People's Government (2010b) Beijing 12th Five-Year Low-Middle Income Housing (Bao Zhang Fang) Plan (2010-2014).
- Beijing Review (2010) Joint ownership housing. April 8. Accessed at <http://www.bjreview.com.cn/> on 10 May, 2013.
- Beijing Review (2010b) Can 'Mixed Living' Narrow The Rich-Poor Gap? August 5. Accessed at <http://www.bjreview.com.cn/> on 10 May, 2013.
- Chen, Junhua, Fei Guo, and Ying Wu. (2011) One decade of urban housing reform in China: Urban housing price dynamics and the role of migration and urbanization, 1995-2005. *Habitat International* (35), 1-8.
- China Economic Review (2011) The poor house: Beijing needs to follow through on low-income housing. April 1. Accessed at <http://www.chinaeconomicreview.com/content/poor-house> on 6 May, 2013.
- China Statistical Yearbook (2012) China Statistics Press
- Cook, Ian G., Chaolin Gu, and Jamie Halsall. (2013) China's Low Income Urban Housing. *Asian Social Science* 9(3), 7-17.
- Deng, Lan, Qingyun Shen, and Lin Wang (2011) The Emerging Housing Policy Framework in China. *Journal of Planning Literature* 26(2), 168-183
- Haidian Bureau of Statistics (2012) *Haidian Tongji Nianjian (Haidian Statistical Yearbook)*.
- Hornby, Lucy and Langi Chiang (2012) China's "affordable housing" numbers don't quite add up. Reuters. Feb 28. Accessed at <http://www.reuters.com/article/2012/02/29/us-china-housing-idUSTRE81S0BA20120229> on 1 May, 2013.
- Liao, Zheng Xin (2012) The compilation and implementation of Beijing housing security plan, *Beijing Planning Review* 1, 52-55.
- UN-Habitat. 2012. *State of the World's Cities (2010-2011)*. Nairobi: UN-Habitat.
- Wang, Wei and Qin Zhongwei (2011) Beijing to unlock affordable homes. China Daily. January 20. Accessed at: <http://topic.chinadaily.com.cn/index/cache?collection=cbsweb2&source=China+Daily&title=Beijing+to+unlock+affordable+homes&aid=11891332> on 4 May, 2013.
- Wang, Y. P., Shao, L., Murie, A., & Chenf, J. (2012) The Maturation of the Neo-Liberal Housing Market in Urban China. *Housing Studies*, 27(3), 343-359.
- Wharton Real Estate (2011) Out of Reach? China's Affordable Housing Ambitions. Accessed at <http://www.knowledgeatwharton.com.cn/index.cfm?fa=viewArticle&Articleid=2434&languageid=1> on 3 May, 2013.

Wu, Fulong, Fangzhu Zhang, and Chris Webster (2012) Informality and the Development and Demolition of Urban Villages in the Chinese Peri-urban Area. *Urban Studies* 50(10), 1919-1934.

Yang, Xiaojing (2012) Low-Income Housing System Research Project Report Abstract. Unirule Institute of Economics. Accessed at: <http://english.unirule.org.cn/Html/Unirule-News/2011101220565096.html>
On 5 May, 2013.

Yang, Ming (2012b) Beijing urban spatial development assessment and recommendations. *Beijing Planning Review* (1), 36-40

Zhang, Meirong (2013) 70% residential land used for affordable housing. April 12. Accessed at http://beijing.china.org.cn/2013-04/12/content_28516617.htm on 2 May, 2013.

Zheng, Siqi, Fenjie Long, C. Cindy Fan, and Yizhen Gu (2009) Urban Villages in China: A 2008 Survey of Migrant Settlements in Beijing." *Eurasian Geography and Economics* 50(4), 425-46.

Track 5: Forum on Planning Education: Are we doing it right?

49th ISOCARP Congress Proceedings

Expanding Experiential Learning in Australian Planning Schools

Claudia BALDWIN, University of the Sunshine Coast*, Australia

Johanna ROSIER, University of the Sunshine Coast, Australia

Christine SLADE, University of the Sunshine Coast, Australia

Trevor BUDGE, La Trobe University, Australia

Eddo COIACETTO, Griffith University, Australia

Andrew HARWOOD, University of Tasmania, Australia

Tim PERKINS, Edith Cowan University, Australia

Ari LA VACHE, Planning Institute of Australia, Australia

(Author ID: 180)

Conference Theme: *Forum on Planning Education: Are we doing it right?*

Abstract

Recent reviews identified the need for development of new skills and qualities in graduating planners in Australia, including collaboration, communication, critical thinking and understanding complexity (Gurran et al. 2008; Jones et al. 2009). Students can construct such knowledge, skills and values by means of direct experience in a real world context, through a purposeful process of engaged, active learning known as 'experiential learning' (EL) (Kassem 2007, p2). Learning in an EL context is dependent on a meaningful interaction between quality experiences and personal reflection of those experiences (Fowler 2008; Harvey et al. 2010). To date, the criteria used by the Planning Institute of Australia (PIA), the national accrediting body, to assess planning schools, has not given adequate weight to the contribution made by EL in student learning and development of graduate attributes.

This paper reports on a multi-university project with two main goals: to document and improve EL practices in tertiary planning schools in order to enhance student learning; and to ensure that planning education is relevant to a global future, in collaboration with PIA and industry, by recognising the value of EL in the planning school accreditation process.

The project commenced with a baseline survey of Australian and New Zealand planning schools to identify the extent of EL. In the second stage, the project team developed and tested activities and assessment methods over two semesters in five Australian universities, based on a collaboratively developed EL framework of principles and criteria. The main project output is a freely available online toolkit of resource materials for use by planning educators to credibly extend the use of EL and improve assessment of student learning. Importantly, the project outcomes benefit planning schools and practitioners around the globe where educators aim to facilitate students' and graduates' continuous learning and adaptation to a rapidly changing world. This paper focuses on recommendations to the accrediting body, PIA, about how to adequately recognise and evaluate the benefits of EL for planning graduate attributes.

Context

To prepare students for the complex world of planning is challenging. Planners need to have spatial, economic, social, legal and political understanding to be able to positively contribute to the built and natural environment. They need to be able to work in multi-disciplinary teams, and embrace continuous learning as they adapt to a world of uncertainty.

Recent reviews have identified the need for development of new skills and qualities in graduating planners in Australia, including collaboration, communication, critical thinking and understanding complexity (Gurran et al. 2008; Jones et al. 2009). Students can construct such knowledge, skills and values by means of direct experience in a real world context, through a purposeful process of engaged, active learning known as, 'experiential learning'"(EL) (Kassem 2007, p2). Learning in an EL context is dependent on a meaningful interaction between quality experiences and personal reflection of those experiences (Fowler 2008; Harvey et al. 2010). Thus, we argue that to grow future planners, educators need to expand the provision of EL approaches to teaching and learning.

Professions around the world, such as medicine, engineering as well as planning, require their tertiary education programs to produce their future employees so that new graduates have the skills and knowledge to carry out a certain level and range of work. There is also growing evidence that students, particularly in applied fields of education including urban and regional planning, nursing, teaching, social work, engineering and management, benefit from the incorporation of experiential learning into curricula and programs (Elwood 2004; Davis 2006; Fowler 2008; Trigwell & Reid 1998). Professional bodies review the curriculum, faculty expertise, and evidence of teaching outcomes to assess if they meet required standards of content, and teaching and learning. Program reviews generally take place every five years, depending on the accrediting body. Students not only accept, but also expect that the profession is guiding their education so they will be employable and contribute to the future.

To date, it could be argued that the criteria used by the Planning Institute of Australia (PIA), in its Accreditation Policy (PIA 2010) to assess planning schools, has not given sufficient weight to the contribution made by EL in student learning and the development of graduate attributes. EL is generally only referred to as work experience or a practicum and is seen as desirable but not essential.

This paper briefly describes a multi-university project with two main goals: to improve EL practices in tertiary planning schools in order to enhance student learning, and to ensure that planning education is relevant to a global future. Project participants collaborated with the PIA in order to inform the planning school accreditation process about the benefits and importance of EL in training future planners. The paper proposes that an activity has to display certain attributes in order to be considered EL. These attributes need to be demonstrated in courses throughout the planning curriculum, and made evident during the planning school accreditation process. Thus, the intention is that EL be embedded in PIA accreditation criteria.

Australian Planning School Accreditation Requirements

Curricula and pedagogy in Australian planning programs are guided by the PIA Accreditation Policy (PIA 2010). The current policy provisions reflect similar developments which are occurring in the Royal Town Planning Institute (RTPI, 2012) and the American Planning Association (APA 2012) which expect planning programs to establish relationships with professional planners and provide a variety of practical experience opportunities (practicums) which may result in 'professional placements' (RTPI) or 'internships' (APA). All professional institutes recognise that work experience may not always be available. However, it is expected that a good planning program should be able to offer some kind of alternative experience if work placements are not offered within the program.

In Australia, several studies have identified the importance of practical experience in the education of planners. The 2004 National Enquiry into Planning Education and Employment (PIA 2004, p17) recognised that young planners in particular value the inclusion of a compulsory work experience as part of a planning degree. Gurran et al. (2008) go further,

recommending industry support for work placements, scholarships, and cadetships. They believe that

it is critical to ensure that students engage with some form of meaningful professional experience and have the opportunity to reflect on this experience during the course of their planning degree. Alternative models to structure this experience deserve further discussion and debate, in the context of PIA's educational policy and accreditation requirements.' (Gurran et al. 2008, p 44).

The current PIA accreditation policy does not specifically refer to EL but provides for practical experience to be gained using a variety of learning activities, including practical studies of a supervised nature, structured workplace placements, or appropriately supervised projects. The structure and approach to all practical experience is of concern to the PIA, which differentiates between professional work experience and work integrated learning in its accreditation policy that states:

Where professional work experience is a formal requirement of a qualification, the Visiting Board will evaluate the quality and supervision of the work experience. It will seek to ensure that it assists in the acquisition of core knowledge and skills. Where a program does not include a formal requirement for professional work experience, the Visiting Board will consider prepared, supervised, and reflective work-integrated learning that forms part of the educational curriculum to demonstrate how skills, knowledge and competencies obtained through work experience are acquired'. (PIA 2010,p8).

However, these policy provisions would be significantly improved by the inclusion of criteria by which the quality of both professional work experience and work integrated learning alternatives may be assessed by Visiting Boards.

Study Methods and Outcomes Provide a Foundation for our Proposal

1) Benchmarking Survey

A baseline survey of all planning schools in Australia and New Zealand conducted by the project team in 2012 identified that EL was a key component in over 100 courses/units within the 18 out of 23 universities that responded. Teaching and learning activities involving EL varies widely, including work placements, design studio design, field trips and role plays. The number of courses assessing student learning from the EL activities varies depending on the particular learning activity; for example 11 out of 13 formal work placement courses and 18 out of 19 studio courses are assessed but less than half guest speaker activities are assessed in any way. Reflection is a key component of Kolb's (1984) learning model so both formal and informal assessment should be used to give students feedback on their learning progress and to gauge the benefits of an activity. Of further interest to the project is whether existing assessment methods are adequate for measuring the transformational learning that occurs in EL activities.

2) Trial and Test of EL Case Studies Against EL Principles

The project team developed and tested activities and assessment methods over two semesters in five Australian universities, based on a collaboratively developed EL framework of principles and criteria (presented later). The framework is founded on Kolb's experiential learning model (Kolb 1984; Kolb & Fry 1975) in which learning is viewed 'as a process of experience, reflection, cognitive processing, and applying new knowledge in new situations' (Turunen & Tuovilla 2012, p. 116). The principles aided course designers to draw maximum EL benefit from a wide range of activities, including activities with less 'real world' integration, such as in-class role plays and guest lectures. Activities were evaluated by use of student

surveys and interviews with external participants, who were mainly professional planners. Based on this data, a number of case studies were developed that exemplify the relationships between EL activities, assessment and the EL principles.

3) Online Toolkit of Resources

The main project output is a freely available online toolkit of resource materials derived from the case studies. The intended audience for the website includes planning educators to provide them with resources to credibly extend the use of EL and improve assessment (see www.usc.edu.au/explearning). The toolkit is expected to be of particular benefit to new planning educators, and planning schools and practitioners around the globe who endeavour to facilitate students' continuous learning and adaptation to a rapidly changing world.

4) Recommendations for Accreditation

Members of the project team work shopped the outcomes to extract insights from the process so as to inform the planning school accreditation process delivered by the accrediting body, PIA. A particular focus was how to adequately recognise and evaluate the benefits of EL to planning graduate attributes. At the time of writing this paper, plans are to workshop the draft recommendations with planning school advisory committees, PIA state and national education committees, and a network of professional planners over the next few months. The outcomes will be reported at the ISOCARP Conference.

The remainder of this paper focuses on our project team recommendations for strengthening the accreditation process.

Implications for Accreditation

Based on the outcomes of this project, EL should be an integral element of each year of an accredited planning program. In seeking accreditation, a university needs be able to demonstrate how it is using EL across the four year program, with courses in each year building in greater complexity and exposure to real world experience. EL could be evidenced through a range of activities, from guest lectures, field trips, role plays, and design studios of a 'real' site or client. While study tours or international field trips would not be mandatory, their value as a transformative experience should be recognised. Early in a planning course, EL could include shadowing a professional planner for a few days, or experiencing a 'Day in the Life of a Planner'. The culmination would be a latter year structured work experience under guidance of a professional planner, accompanied by formal assessment.

Our team proposes that in order for an activity to be considered to provide EL, it should meet most, if not all, of the following principles:

- purposeful
- student-centred
- theory-practice dialectic
- real world context
- guided practice
- reflection
- evaluation, and
- community-university partnership.

Several of these principles are attributes of good learning and teaching, such as 'student-centred' and 'purposeful', but we suggest that others, such as a dialogical exchange between theory and practice, and 'reflection' are core to EL. The process of reflection involves an individual exploring their past or present experiences in order to gain new

insights and understanding (Boud et al 1989). Learning the skills of self-assessment through reflection of EL whilst at university establishes a lifelong practice for graduates to meet their own learning needs (Boud 2000). As such, either formal or informal assessment of student learning during or linked to an EL activity contributes significantly to effective learning. For example, a field trip or site visit that incorporates guided learning about planning issues or techniques (e.g. pointing out and discussing attributes of water sensitive urban design) could be classified as EL, but might not be assessed, other than through group reflection on observations shared at the end of the field trip. However, the field trip might be core to development of an assignment, a policy, code or design, which is then formally assessed.

Feedback from our student surveys of EL activities is that these learning outcomes cannot be achieved in any other way. Benefits of integrating EL throughout a planning education are that it:

- improves student confidence about having the skills to be able to deal with complex issues;
- exposes students to issues of diversity of communities such as age, gender, cultural, disability, and Indigenous; and
- contributes to graduate attributes desired by prospective employers such as communication, teamwork, and critical thinking.

Developing effective EL activities, however, takes additional time and effort by educators. If this is not recognised in accreditation processes, then it can jeopardise uptake and integration of EL into planning curriculum.

Conclusion

Our principles for EL were used to improve course curriculum and assessment of student learning among the participating five Australian universities. A key outcome is a toolkit to assist planning educators nationally and globally to improve the integration of EL into tertiary planning education.

Such education supports, at an early stage of a planner's career, the PIA's objectives to instill lifelong learning concepts to continue to deepen the knowledge base of planners and planning specialists. An EL approach supports self-efficacy to focus, invigorate and position the profession to be committed to championing and delivering good planning (PIA 2012; PIA 2013).

As a result, we propose a series of recommendations that should be considered in a review of PIA's accreditation policy and would like to take the opportunity provided by the ISCOARP Conference to gain feedback from overseas colleagues.

References

- Boud, D 2000, 'Sustainable Assessment: rethinking assessment for the learning society', *Studies in Continuing Education*, Vol. 22, No. 2, pp.151-167.
- Boud, D, Keogh, R & Walker, D 1989, *Reflection: Turning experience into learning*, Kogan Page Ltd, London, UK.
- Davis, G 2006, 'The role of case studies for the integration of sustainable development into the education of engineers', *World Transactions on Engineering and Technology*, Vol. 5, No. 1, pp. 159-163.
- Elwood, S 2004, 'Experiential Learning, Spatial Practice and Critical Urban Geographies', *The Journal of Geography*, Vol. 103, No. 2, pp. 55-63
- Fowler, J 2008, 'Experiential learning and its facilitation', *Nurse Education Today*, Vol. 28, pp. 427-433.
- Gurran, N, Norman, B & Gleeson, B 2008, *Planning Education Discussion Paper*, Prepared for the Planning Institute of Australia, January 2008.
- Harvey, M, Coulson, D, Mackaway, J & Winchester-Seeto, T 2010, 'Aligning reflection in the cooperative education curriculum', *Asia-Pacific Journal of Cooperative Education*, Vol. 11, No. 3, pp. 137-152.
- Jones, M, Coiacetto, E, Jackson, J, Coote, M, Steele, W, Budge, T & Gall, S 2009, 'Generating academic standards and assessment practices in work integrated learning: a case study from urban and regional planning', *Asia-Pacific Journal of Cooperative Education*, Vol. 10, No. 3, pp.203-215.
- Kassem, G 2007, *Task Force on Experiential Learning*. Report to Faculty Assembly Executive Council, Ramapo College of New Jersey, March 28, 2007, viewed September 2009, <http://ww2.ramapo.edu/libfiles/Provost/Experiential_report_0607.pdf>
- Kolb, D 1984, *Experiential Learning: Experience as the Source of Learning and Development*, Prentice-Hall, Englewood Cliffs.
- Kolb, D & Fry, R 1975, 'Toward an applied theory of experiential learning', in C. Cooper (ed.) *Theories of Group Process*, John Wiley, London.
- PIA (Planning Institute of Australia) (2004), *Findings and Recommendations of the National Inquiry into Planning Education and Employment*, viewed 21 July 2013, <<http://www.planning.org.au/documents/item/294> >
- PIA (Planning Institute of Australia) 2010, *Accreditation Policy for the Recognition of Australia Planning Qualifications for the Urban and Regional Planning Chapter*, viewed 21 July 2013, <<http://www.planning.org.au/documents/item/2244>>
- PIA (Planning Institute of Australia) 2012, *PIA Strategic Plan 2012-2015*, viewed 21 July 2013, <<http://www.planning.org.au/documents/item/4272>>
- PIA (Planning Institute of Australia) 2013, *Planning Matters: Shaping the World Today for Tomorrow*, viewed 21 July 2013, <<http://www.planning.org.au/policy/planning-matters>>
- Trigwell, K & Reid, A 1998, 'Introduction: Work-based learning and the student's perspective'. *Higher Education Research and Development*, Vol. 17, No. 2, pp.141-154.

Baldwin et al, Expanding Experiential Learning in Australian Planning Schools, 49th ISOCARP Congress 2013

Turunen, T & Tuovilla, T 2012, 'Mind the gap. Combining theory and practice in a field experience', *Teaching Education*, Vol. 23, No.2, pp. 115-130

What do planners do? Define Your Discipline to drive undergraduate curriculum renewal

Marita Basson, University of Southern Queensland, Australia

David Dowling, University of Southern Queensland, Australia

The debate about the nature of planning continues as the profession seeks to maintain currency in an ever changing world, where environmental, educational, societal, and technological changes are rapid and often unpredictable. In these dynamic contexts, universities are expected to ensure that planning education programs continue to produce competent professional planning graduates who can adapt their practice to cope with change. The question is: how should universities decide what planning reality to prepare students for? Is it one where planners are scarce and graduates need to be job ready or is it a reality where planners are change managers who use higher order thinking skills and systems theories to guide their practice? Or, is it a mix of these separate realities? To prevent a skewed definition of the nature of the discipline it is important that all of the stakeholders have an opportunity to freely and equally contribute in any process used to define the planning discipline. The authors used the inclusive Define Your Discipline (DYD) Stakeholder Consultation Process in a pilot study in Queensland to create a draft Graduate Capability Framework for planning degree programs. Once complete, the Framework could be used to inform not only curriculum renewal, but also professional accreditation processes.

Key words: capability frameworks, graduate attributes, Define Your Discipline, accreditation, planning education

1. Background

1.1. Changing Higher education contexts

In Australia, the Tertiary Education Quality and Standards Authority (TEQSA) was established in 2012 to oversee the quality and standards of higher education programs and the service provided by universities and other providers. The Tertiary Education Quality and Standards Act 2011 also established the Higher Education Standards Panel (HESP), an advisory body that works independently from TEQSA, the regulator. HESP's functions are:

- To advise and make recommendations to the Commonwealth Minister(s) responsible for tertiary education and research on the Higher Education Standards Framework; and
- To advise and make recommendations to TEQSA on matters relating to the Higher Education Standards Framework (HESP, 2012).

HESP is currently reviewing the Tertiary Education Threshold Standards legislated in the 2011 Act (HESP, 2013). The Panel is consulting widely and reporting its findings in regular communiqués. Importantly, it is proposing to include the following components in the revised Threshold Standards:

- *Learning Outcome* and *Course Design* standards; and
- *Reference Points*, which are not standards but national codes and frameworks (including discipline specific materials) that will be of value to providers thinking about demonstrating achievement of particular standards (HESP, 2013). For example, PIA's accreditation documents may be listed as a Reference Point for planning programs.

It is therefore expected that the definition of learning outcomes will become an important component of course (program) design. This would mean that discipline groups would have to develop learning outcomes for their disciplines, preferably at the national level.

One option for the planning discipline would be to fully develop the draft Graduate Capability Framework for planning degrees discussed in this paper, so that it becomes a nationally recognised framework. Then, if appropriate, PIA could recommend that HESP list it as a Reference Point for planning degrees. It would then become an important tool for universities undertaking reviews of their curricula and pedagogies.

1.2. Educational context

The educational context of the Graduate Capabilities defined by the DYD Process is illustrated in Figure 3, which shows the four phases of a policy-driven cyclical process for the review, design, delivery and evaluation of the curriculum for a program (Dowling, 2005). The cycle may be completed annually, or it may be aligned with an accreditation cycle, which in the case of the Planning Institute of Australia is five years.

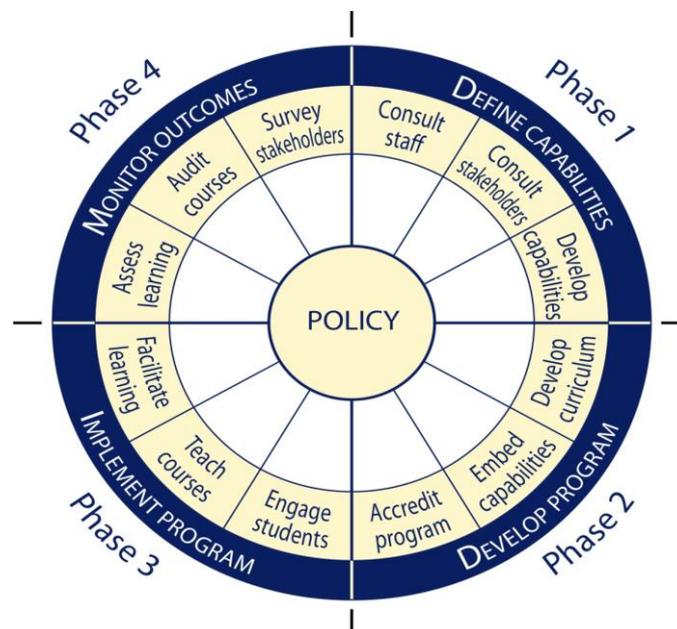


Figure 1: Title of Figure 1

Figure 3: A graduate capability driven curriculum design and delivery process
(Adapted from Dowling, 2005)

The four phases of the cycle are:

Phase 1: A set of Graduate Capabilities is defined for a program, or an existing set is reviewed.

Phase 2: The Graduate Capabilities are used to inform the development of the curriculum for a new program or to review the existing curriculum for a program.

Phase 3: Students acquire the Graduate Capabilities through their engagement with learning and teaching activities.

Phase 4: Student capabilities are assessed and the stakeholders evaluate the program.

The DYD Stakeholder Consultation Process can be used to inform Phase 1 of the cycle, i.e. the definition or review of the Graduate Capabilities for a program.

1.3. Changing planning contexts

Both planning practice and theory have evolved substantially from their nineteenth century reformist roots due to the fact that the intellectual basis of planning is exceptionally flexible and fluid (Davoudi, 2010). Planning now facilitates economic, social and environmental change in our cities, and planners are working in jobs that did not exist a decade ago or in jobs that were not considered to be part of the planning discipline in previous decades, for example: writing climate change policy for a local authority; assessing development loans for property developers; or finding sites for hard infrastructure for energy companies (Coiacetto et al., 2011). Not only are planners doing novel jobs, but the complexity of what they do has also increased due to socio-political changes and government responses to those changes (Dredge and Coiacetto, 2006).

One of the broader changes impacting on planning practice has been the return to an emphasis on the global perspective of planning, leading to an increasing focus on international content in planning programs (Yigitcanlar et al., 2009). This brings with it certain challenges in terms of maintaining a focus on local planning contexts (Whitzman, 2009). The expansion of the domain of the planner has led to the criticism that the boundaries of planning have become too diffuse due to the increased breadth of the profession (Siftel, 2009). Other scholars argue that planning has been reduced to solving current problems rather than creating a vision for the future (Meng, 2009). The debate about the nature of planning is impacted by the fact that the complexity of planning as a profession is further compounded by the highly political contexts within which planning occurs (Planning Institute of Australia, 2012).

2. What is planning?

2.1. Planning as a profession

Planning as a discipline is a social construct that has evolved through historical processes and involves both objects and methods of study (Davoudi, 2010). Planners have a common set of knowledge even though they might specialise in other substantive areas (Association of Collegiate Schools of Planning, 2012). Reeves' (2009, p.30) definition of an excellent planner suggests what these common elements might be:

An excellent planner is someone skilled at envisioning the future and communicating the possibilities; showing an outstanding understanding of how the environment (both built and natural) impacts on different groups of people; expert at thinking and acting strategically, highly effective at making connections, looking to the long term. An excellent planner interacts with other professionals, works effectively with the community, comes up with creative solutions and builds the evidence base to plan ahead.

Planning as a profession does, however, have local geographical and political contexts as well and for the purpose of compiling an Australian framework of graduate capabilities for planners, the Australian context is important.

Of course, the question is, how will this vision, or another vision, be translated into the curricula and pedagogies that will equip graduates with the knowledge and skills to practice in this manner?

2.2. Planners and planning in Australia

The planning specialisations currently recognised by the Planning Institute of Australia (PIA) are: social planning; environmental planning; economic planning; planning law; transport planning; and urban design (Planning Institute of Australia, 2012). Although the critical skills shortages experienced in these fields over the last decade appear to have abated because of government cutbacks and the global financial downturn, historically there has been an

almost perpetual imbalance between supply and demand in the profession (Planning Institute of Australia, 2012, March et al., 2012).

Gurran et al. (2008) suggest that periods of planner shortages generate greater pressure for job ready graduates. A focus on providing staff to fill critical skills gaps results in less focus on pedagogy: the teaching of planning and the development of excellence in planners (Reeves, 2009, Gurran et al., 2008). Reeves argues that the time has come to consider how to best develop excellence in planning education while ensuring an adequate supply of job ready planners (Reeves, 2009).

The persistent shortage of planners in rural and regional areas was investigated using online surveys of planners (85 respondents) and PIA members (50 respondents) (Miller et al., 2011). In their report, Miller et al. (2011) stated that the shortage of planners can in part be attributed to people leaving the profession. They also found that empirical research into the actual experience of 'being a planner' is almost non-existent.

DEEWR (2012) reports that nearly ten percent of the professional group that includes planners leave their profession each year (DEEWR, 2012). In particular, there was a leakage of women from the planning workforce into allied professions and a leakage of graduates with one to five years' experience (Planning Institute of Australia, 2004). The leakage of recent graduates has been attributed to firstly a mismatch between planning education and the roles graduates undertake in their first years of practice, and secondly the lack of practical professional development activities, including the development of the coping skills required by young planners (Planning Institute of Australia, 2012). Stress and burnout are evident in some areas of planning practice according to a national inquiry into planning education and employment (Planning Institute of Australia, 2012, Bosman et al., 2011). It is evident that these trends and the trends in planning education need to be researched concurrently so that evidence based solutions can be developed and implemented (Bosman et al., 2011).

3. Planning education

3.1. A international perspective of planning education

Australian planning educators should be conscious of, and informed by, international trends (Budge, 2009). For example, what impact will the 1999 Bologna Accord have on planning education in Australia? With 29 European countries as original signatories, the Accord recommends a three year undergraduate course followed by a two year master's course, with the minimum planning qualification being a master's degree (Whitzman, 2009). Internationally, there is evidence to suggest that planning schools are yet to find an optimal home in universities, a place where they can reside comfortably with a compatible mix of cognate disciplines. This is because, in different universities, planning schools are found to be residing with different mixes of disciplines such as architecture, engineering, surveying, geography and the social sciences. Some schools have also shifted one or more times within their university. The result is that the content and focus of planning programs is variable and has often shifted over time due to the influences of the co-habiting disciplines (Bosman et al., 2011).

In the nineteen eighties, plan implementation tools were core components of the curricula and course work included zoning and subdivision regulation, impact assessment, site plan review, and conflict resolution (Siftel, 2009). Since then the focus has shifted because of a renewed interest in design, particularly New Urbanism, walkable communities, and urban design, driven in part by the emphasis in European policy on spatial planning (Siftel, 2009). More recently, planning and education schools have been pressured to adopt a one-world focus and address issues such as rapid urbanization, mega-city growth, and climate change. The question is how do planning schools prepare graduates who can skillfully operate in these contexts and address all of these competing issues and stresses (Siftel, 2009). Over

all, there appears to be a lack of research into the impact these changes are having on planning education. This needs to be addressed (Budge, 2009).

3.2. An historical perspective of planning education in Australia

Although there is little research on planning education in Australia (Bosman et al., 2011) it is known that undergraduate planning programs are the most important source of professional planners in Australia (Dredge and Coiacetto, 2006) and that the number of planning schools is at an all-time high, as are student numbers and the rate of growth in student numbers (Siftel, 2009). The fact that universities are the main source of planners, necessitates the consideration of how professional attributes are developed in the university setting (March et al., 2012).

In the early days, university planning cohorts were small and planning education was mainly problem-based studio-learning (Bosman et al., 2011). In the late nineteen forties planning education at the South Australian School of Mines and Industries (now the University of South Australia) and the University of Sydney were very much focused on the traditional design topics. During the nineteen fifties there was an adoption of applied social science theories and techniques to the extent that, by the late nineteen seventies, planning school curricula covered a range of Australian policy matters that impacted on the settlement of people (Siftel, 2009). Coinciding with the broadening scope of planning education and the sharply increasing student numbers in the nineteen sixties and early nineteen seventies, was criticism that too much technical content had been lost from planning curricula (Siftel, 2009). This era partly coincided with the modernist acceptance of greater stakeholder participation in planning following the social unrest of the nineteen sixties (Siftel, 2009).

The recent shortage of planning academics impacted on teaching styles and led to mergers with allied disciplines resulting in common and core subjects being taught by academics with diverse 'home' disciplines (Heywood, 2006). A fundamental question planning educators face when school mergers are proposed is: what are the competencies that distinguish planners from geographers, architects, environmental scientists or professional mediators, i.e. the competencies that no other professions can legitimately claim as their own? It is only when they can answer this question that planning educators can ensure that planning programs continue to enable graduates to acquire these core competencies.

The shortage of planners and planning academics also led the Planning Institute of Australia to undertake a review of planning education in an effort to determine the underlying causes of the shortages. The review covered topics such as the skills and capabilities of planners, teaching methods, and the role of accreditation and the responsibilities of the various stakeholders in planning education. The results were reported in the publication: 2008 Planning Education Discussion Paper (Siftel, 2009). The key findings related to: the tension between the needs and expectations of industry and the broader role of planning education; the possible role of the TAFE sector as well as online and distance education and training; and the need for a greater convergence between higher education quality assurance processes and PIA accreditation requirements (Gurran et al., 2008).

3.3. What should planning schools teach?

So, how can planning schools decide where the emphasis should lie in their programs when both the breadth and depth of the planning profession continually change and grow in response to the needs of urban and regional communities in an ever-changing world? What importance should be attached to the following topics: the technical planning skills (e.g. statutory knowledge, strategic planning and urban design skills, computerised modeling); the soft or generic skills (e.g. communication, conflict resolution, project management, leadership); the emerging fields (e.g. social planning, economic planning, transport planning); and the wicked problems such as climate change, population growth, sustainability, and food security (Budge, 2009, Miller et al., 2011)?

Miller et al. (2011) have suggested that planning schools should start with the question: What knowledge, skills and abilities do planning graduates need to pursue a rewarding and successful career as a planning practitioner?

Certainly, the planning industry is eager to have job-ready applicants (Whitzman, 2009) and young planners express the need to be job-ready (Gurran et al., 2008). They have good reasons to expect this, as the Department of Education, Employment and Workplace Relations reported that for the majority of graduates who were rejected for planning positions in South Australia in 2012 the reason was the fact they had insufficient experience in assessing development applications (Australian Government, 2012). Employers want proof of more than students' credentials, they want to see evidence of competence (Reeves, 2009).

However, Bosman et al. (2011) argue that there is an overemphasis on the needs of the planning industry, and that the education discussions should be balanced against the wider education context. Budge (2009) picks up from Davoudi's (2010) statement that moving beyond disciplinary boundaries is important, and argue the very diversity and adaptability of planner education is increasingly valuable. For example the range of subject matter that: promotes the development of skills; promotes inquiry; and that develops the capacity to deal with new agendas and conflict. This diversity is required because planning is a way of thinking, acting and operating in a political economy that produces spatial outcomes (Budge, 2009). Budge (2009) also emphasises the need for planners to be able to cope with change by stating that: if planning schools do nothing else, they should equip students with skills that will enable them to adapt to change (Budge, 2009), who are resilient, innovative and can cope with diversity (Yigitcanlar et al., 2009).

This "creative tension" between the needs and expectations of industry and the broader role of planning education may, in future, lead to the division of the current role into two roles: planning technicians and professional planners. Professional planners would use their critical thinking skills and interdisciplinary knowledge to complete complex tasks and to address non routine strategic and other planning issues. Planning technicians would apply codes and standard techniques to undertake routine tasks such as development assessment activities. Whitzman argues that such a split might be a positive development (Whitzman, 2009).

In the meantime, planning educators need a good understanding of the roles that current and future graduates will undertake in future planning environments. This paper describes how the simple, but elegant, Define Your Discipline (DYD) Stakeholder Consultation Process (Dowling and Hadgraft, 2013a) was used during a Planning Institute Australia (PIA) sponsored pilot study in Queensland to shed light on the nature of the planning discipline by focusing on the perceptions of different stakeholders about the tasks planning graduates are expected to undertake in industry (Dowling and Basson, 2013).

3.4. The PIA Accreditation Policy

The National Education Committee of the Planning Institute of Australia developed an Accreditation Policy following a consultative program during the period 2009-2010 (Planning Institute Australia, 2011). The Policy was intended to assist PIA accreditation panels in conducting accreditation reviews of tertiary education planning programs.

The Policy defines three components, or knowledge domains, and a series of Competency Areas for each domain (see Table 1). The policy also lists:

- a set of *Performance Outcomes* for each of the three Competency Areas in the *Core Curriculum Competencies* domain (B); and
- a *Competency Statement* and set of *Performance Outcomes* for each of the five Competency Areas in the *Supporting knowledge areas* domain (C).

Table 1: PIA Accreditation Policy: Competency areas

Knowledge Domains	Competency areas
A. Generic Capabilities and Competencies	1. Problem identification
	2. Research
	3. Analysis
	4. Self-Reflection
	5. Spatial thinking and application
	6. Strategic thinking
	7. Problem solving
	8. Communication
	9. Team work
	10. Work readiness
B. Core Curriculum Competencies	1. Professionalism, Practice and Ethics
	2. Plan making, Land use allocation and management, and Design
	3. Governance, Law, Plan implementation and Administration
C. Supporting Knowledge Areas	1. Urban design
	2. Economic planning
	3. Social planning
	4. Environmental planning
	5. Transport planning

It should be noted here that the seven PIA Practice Contexts (see above) are related to seven of the *Competency areas* (B2, B3, C1, C2, C3, C4, and C5).

4. Methodology

4.1. The DYD Stakeholder Consultation Process

The Define Your Discipline Stakeholder Consultation Process is an efficient, effective, and inclusive consultation process that can be used by a discipline to define, at a national level, a Graduate Capability Framework for programs in their discipline at each of the relevant AQF levels (Dowling and Hadgraft, 2013a). It is designed to capture the views of all relevant stakeholders (such as practitioners, recent graduates, and academics) about the tasks graduates undertake in their first few years of practice. Since 2010 the DYD Process has been used to define Capability Frameworks in six disciplines and at three AQF levels (levels 6, 7 and 8). For example, a Graduate Capability Framework was developed for four-year environmental engineering degrees (Dowling and Hadgraft, 2013b). That project was sponsored by the Environmental College of Engineers Australia and the published Guide includes the accreditation requirements for environmental engineering programs.

When applying the DYD process a national or state approach is recommended because:

- It is more efficient for a discipline to undertake this work at a national level rather than at the single institution level;
- It provides a discipline with the opportunity to develop a shared understanding about the capabilities of graduates from the various programs offered in their field; and
- It overcomes the risk of a School's locally-defined Graduate Capabilities not being aligned with the views of the members of an industry accreditation panel that are from other states or territories (Dowling and Hadgraft, 2013a).

A nationally agreed set of detailed Graduate Capabilities for a program would be a valuable resource for discipline leaders tasked with reorienting their undergraduate programs to meet current and emerging trends in their discipline (Dowling and Hadgraft, 2013a).

4.2. The Queensland Planning Pilot Project Workshops

During 2012, the DYD Process was used to develop a draft Graduate Capability Framework for planning degree programs from data gathered during a pilot study undertaken in Queensland. The capabilities were based on data gathered during six DYD Workshops: three in Brisbane, two in Toowoomba and one in Cairns at the PIA Queensland Conference.

During one of the workshop activities participants are asked to write down up to 20 tasks that they would expect a graduate to undertake in their first three years of practice. The 42 planners (3 academics, 21 practitioners and 18 recent graduates) who participated in the workshops provided more than 600 task descriptions and comments.

The number and type of participants that attended each workshop are shown in Table.

Table 2: The number of participants at each workshop by category

Participants at DYD Planning Workshops				
	Toowoomba	Brisbane	Cairns	Total
Practitioners	8	8	5	21
Recent graduates	4	9	5	18
Academics		3		3
Total	12	20	10	42

Forty three percent of the participants were recent graduates, ensuring that the view of this group was well-presented. One cause for concern was the poor representation of academics at the workshops, as only three academics attended a workshop.

The rural-urban split was 52:48, ensuring a balanced view of tasks expected of recent graduates in different geographical contexts.

Figure 1 shows the employment category of the practitioners. It can be seen that local government and consultant planners were equally represented at the workshops while planners from government departments had a lower representation rate.

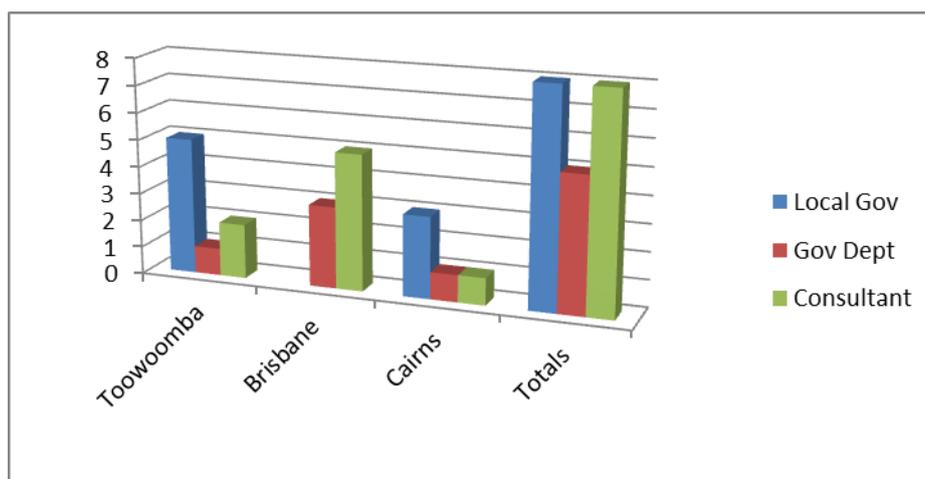


Figure 1: The number of practitioners by employment sector and city

Figure 2 shows the employment category of the recent graduates. It can be seen that government, local government, and consultant planners were well represented at the workshops.

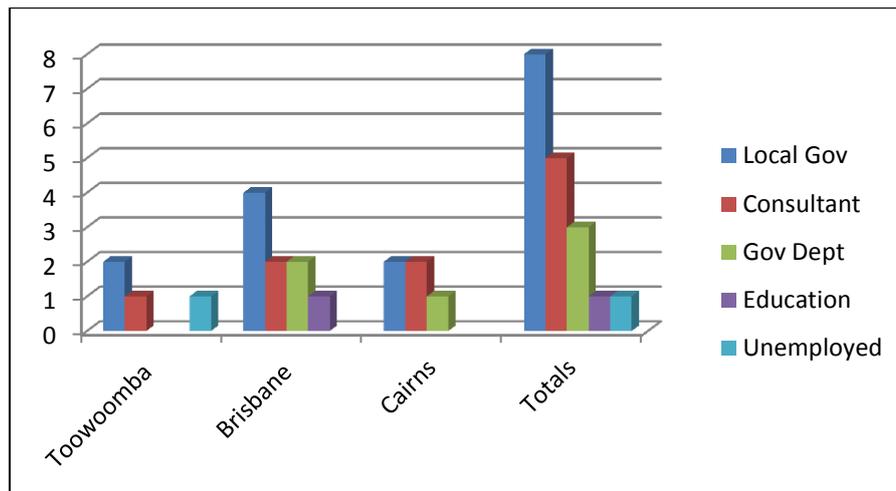


Figure 2: The number of recent graduates by employment sector & city

4.3. Post workshop methodology

The task descriptions and comments were numbered and then entered into a database along with relevant metadata. The tasks were then sorted using the cluster headings supplied by the participants during the convergent phase of each of the workshops. The cluster names nominated at each workshop were compared and it was found that the only name supplied by all of the groups was 'Legislation'. This would appear to indicate that the participants do not have a shared understanding of the profession, or a clear understanding of the knowledge framework defined by PIA.

Initially the Project Team allocated each task to the most appropriate PIA Competence Area (Knowledge Domain A) or Performance Outcome (Knowledge Domains B and C). A summary was also prepared for comparison purposes. The Project team then began the process of developing a Graduate Capability Framework for planning degree programs. Firstly, the clusters names nominated by the participants were synthesised to form a draft set of Capability Clusters and a set of Domains within each Cluster. This process was informed by the PIA Competence Areas and Performance Outcomes.

Each task was then allocated to the most appropriate Cluster and Domain. Normally, the tasks in each Domain would then be synthesised to develop the final set of capabilities. However, this process will not be undertaken until a DYD Planning Project Reference Group reviews, refines and then adopts a draft set of Clusters and Domains. The timing of this will also depend on whether the Pilot Project is extended so that it becomes a national project.

5. Findings and discussion

The key findings from the DYD Queensland Planning Pilot project were:

- Sample size:** The fact that only small numbers of tasks were identified and allocated to some of the key PIA membership areas, such as Transport Planning and Social Planning, highlights the fact that the sample size for the study is too small to adequately represent the breadth and depth of planning as it is practiced in Australia.
- Variations in the size of the Competency Areas:** There are significant differences in the size and complexity of the PIA Competencies and Performance Outcomes. Many could be split into a number of sub-categories, for example: A10: Work readiness; A8: Communication; B1: Ability to use planning tools; and Self-management, teamwork and professionalism.

- c. **Overlaps:** Many of the tasks could have been allocated to two or more Competency Areas due to the similarity of the PIA competencies or statements. For example: Spatial ability in A5 and B1; Teamwork in A9, A10 and B1; and Problem solving in A1, A7 and B1. While it is recognised that the emphasis of the competencies in each Knowledge Domain (A and B) is different, the differences may not be obvious to PIA members.
- d. **Inconsistency of approach:** Some of the PIA Performance Outcomes refer to a knowledge requirement rather than a performance criteria. It is suggested that, for consistency, these should be rewritten as performance outcomes.

For these reasons the DYD Planning Project Team believes that the Pilot Project should be extended into a national study. The key outcomes from a national study would be:

- a nationally authenticated Graduate Capability Framework for planning degree programs at Australian universities which could be used to inform future PIA accreditation requirements; and
- a shared understanding of the breadth and depth of planning as it is currently practiced in Australia. From this perspective, the DYD Stakeholder Consultation Process may be viewed as an educative process because it engages the members of a discipline in informed discussions about their profession. This is particularly so for the DYD Workshop participants.

6. Application

It is expected that the members of each stakeholder group may use the Graduate Capability Framework in different ways:

- **Planning Schools** will use it to support the review and revitalisation of the curriculum in their programs, and to prepare for accreditation reviews by PIA.
- **PIA** members may use it as a companion resource to the PIA accreditation requirements when they participate in a PIA accreditation panel.
- **Planning students** may use it: to gain a better understanding of planning practice; to inform decisions about their career and specialisations; and to help manage their learning so they acquire the knowledge and skills required to commence practice in their chosen specialisation.
- **Employers** may use it: to define graduate roles in their organisation; to assess capabilities during the recruitment process; and to prepare staff development and training activities.

7. Conclusion

The shortcomings in planning education have been apparent in the planning education literature over the past decade. In spite of this, there has not been a coordinated and well-funded attempt to further investigate and report on a capability framework for planners. Projects such as the ALTC project Generating Academic Standards in Planning Practice Education (Jones et al., 2009) have shed much-needed light on certain aspects of planning education, in this case planning practice education, but they do not fulfill the need for a more holistic investigation of planning graduate capabilities.

Jones et al. (2009) remind the profession that the professional accrediting body “plays an important role in achieving a more conjoint and coherent approach between the university and the planning industry”. PIA, on the other hand, acknowledges the need to continually review planning education within Australia (Planning Institute of Australia, 2012a) and hence supported the DYD pilot study.

References

- ASSOCIATION OF COLLEGIATE SCHOOLS OF PLANNING 2012. Guide to undergraduate and graduate education in urban and regional planning. 18 ed. Tallahassee, Florida: ACSP.
- AUSTRALIAN GOVERNMENT 2012. ANZSCO 2326-11 Urban and Regional Planner South Australia. *In: DEPARTMENT OF EDUCATION, E., AND WORKPLACE RELATIONS, (ed.). South Australia Australian Government.*
- BOSMAN, C., COIACETTO, E. & DREGDE, D. 2011. The shifting ground of Australian Higher Education through the lens of reflexive modernisation: compromising the quality of planning education? . *Australian Planner*, 48, 72-83.
- BUDGE, T. 2009. Educating planners, educating for planning or planning education: the never-ending story *Australian Planner*, 46, 8-13.
- COIACETTO, E. J., JONES, M. & JACKSON, J. T. 2011. How to best assess students' learning in work placements:moving beyond current practice. *Australian Planner*, 48, 270-280.
- DAVOUDI, S. 2010. Planning and interdisciplinarity *In: GEPPERT, A. & COTELLA, G. (eds.) Quality issues in a changing European Higher Education Area* Leuven Heverlee: Association of European Schools of Planning.
- DEEWR 2012. ANZSCO: 2326 Urban and Regional Planners. *In: DEEWR (ed.) Occupation trends.*
- DOWLING, D. 2005. The Qualities of a USQ Graduate Attribute Policy. *Academic Board Discussion Paper*. Toowoomba.
- DOWLING, D. & BASSON, M. 2013. A Graduate Capability Framework for Urban and Regional Planning Programs: A Guide for Australian Universities. Interim Report Queensland Pilot Project.
- DOWLING, D. & HADGRAFT, R. 2013a. The DYD Stakeholder Consultation Process: A User Guide. Sydney: Office of Learning and Teaching, Department of Industry, Innovation, Science, Research and Tertiary Education.
- DOWLING, D. & HADGRAFT, R. 2013b. A Graduate Capability Framework for Environmental Engineering Degree Programs: A Guide for Australian Universities. Sydney: Office of Learning and Teaching, Department of Industry, Innovation, Science, Research and Tertiary Education.
- DREDGE, D. & COIACETTO, E. 2006. Planning as a career choice: first year students' knowledge of and attitudes towards planning. *Australian Planner*, 43, 26-35.
- GURRAN, N., NORMAN, B. & GLEESON, B. 2008. Planning education discussion paper. Planning Institute of Australia.
- HESP. 2012. *Welcome to the Higher Education Standards Panel* [Online]. HESP. Available: <http://www.hestandards.gov.au/> [Accessed June 2013].
- HESP. 2013. *Communiqué 8 - HES Reference Points and update on Organising Framework* [Online]. HESP. Available: http://www.hestandards.gov.au/engagement#_Communiqués May 2013].
- MARCH, A., HURLIMANN, A. & ROBINS, J. 2012. Accreditation of Australian urban planners: building knowledge and competence. *Australian Planner*, 2012.
- MENG, L. L. 2009. Megatrends drive planning education: How do we future-proof planners? . *Australian Planner* 46, 48-50.

MILLER, E., SAHAMA, T., GRACE, P., WILSON, C. & HEFFERAN, M. 2011. Motivations, expectations and experiences of Australian rural and regional planners *Australian Planner*, 48, 305-312.

PLANNING INSTITUTE OF AUSTRALIA 2012. Pro forma for SOL2012 Submission *In: AUSTRALIA, S. (ed.)*.

REEVES, D. 2009. Future scoping - developing excellence in urban planners. *Australian Planner*, 46, 28-33.

SIFTEL, B. 2009. Planning the paths of planning schools. *Australian Planner*, 46, 38-47.

WHITZMAN, C. 2009. Reinventing planning education 46, 1.

YIGITCANLAR, T., MAYERE, S., MCCARTNEY, R. & MOHAMED, M. Providing innovative planning education experience: teaching regional planning in an international context. Australian New Zealand Association of Planning Schools 28-30 August 2009, 2009 Brisbane.

Planning education, certification and deregulation in Poland.

Sławomir Ledwoń, PhD, Architect, Gdansk University of Technology, Poland

1. Introduction

Two background factors are important to understand Polish the system planning education. First one is the history of planning itself, and the second one – the methods and focus on teaching urbanism so far.

The recent history of planning in Poland may be divided in to two main periods. After Second World War planning was characterised by governmental regulation of new development that was strictly connected with central policies of the country in communist times. The breakthrough was marked by the system transformation in 1989, when new opportunities for spatial development quickly arose. It shifted the intention of planning laws form comprehensive planning of the country to rather setting the grounds for specific development. Since then the spatial growth was exposed to the pressure of private needs and demands.

Many of the changes that Poland has undergone influenced the planning culture. There was a need to quickly rebuild the country after the demolishment of wars, communist times focused on building new industries and housing. Transformation has brought market led development that was driven by unfulfilled development demands. This was boosted by the accession to European Union in 2004, which enabled substantial European funds to be transferred to Poland. The recent crisis has slowed down the development, but not stopped it at all, as yet there was no recession in Poland. The roles of the architect and urban planner (or “urbanist”) had to change accordingly. Mostly they were driven by the market demand and had to reflect the needs of the developers, sometimes forgetting about higher principles of planning.

As for the second one – teaching urbanism – it refers to educating more often architects and urban designers rather than spatial planners. And also the demand to teach more universal skills after Polish planners were allowed to work internationally more easily.

The above two factors impacted the way that planners are taught in Poland now and how they will have to be taught in the future. On the example of Gdansk University of Technology the article argues what are the differences in teaching architects to be urban designers compared to teaching spatial planners, as well the changes implemented in curriculum at the national level. The article also describes the efforts of newly formed Union of Spatial Management Schools to recognise by Polish government the new field of studies – Spatial Management, as nowadays only Architecture is formally established. It refers to the accreditation issues that were also discussed in Europe by the Association of European Schools of Planning – AESOP. On top of these issues, Polish government has recently taken steps to deregulate planning profession in order to make these jobs more available.

The article is based on the author’s experiences as a member of the Chamber of Urban Planners and active urban planner, a Professor at Gdansk University of Technology, co-author of the New Spatial Management programme at Gdansk University of Technology, a member of the Programme Committee at Architecture Faculty, Gdansk University of Technology and a member of the Task Force for Education and Carrier Development in the field of Spatial Economy at the Committee for Spatial Economy and Regional Planning, Polish Academy of Sciences.

2. Urban planning in Poland as a profession

The profession of urban and regional planners in Poland is regulated by the law of 15 December 2000 on self-governments of architects, building engineering and urban planners (published: Dz. U. z 2001 r. Nr 5, poz. 42). In this law the principles, requirements and rules for working in these professions are set and all professionals must comply with them. According to the article 2 paragraph 3 "practicing urban planning means designing spatial development in regional and local scale, according to the principles of spatial order, protection of architectural and landscape values, with respect to requirements of environmental protection, rational development of settlements and infrastructure as well as education in that matter". This law sets grounds for creation of self-governments that would associate members of these professions.

A member of the Chamber can be anyone that meets any of the below requirements (article 5 paragraph 3 of law on self-governments) those who:

1. have been granted rights to design under the Planning Law of 1994;
2. have been granted rights to design under the Planning Law of 1984;
3. have a diploma from studies in the field of architecture, urban planning or spatial management and have experience of working in the planning industry for at least two years;
4. have a diploma from studies other studies with at least 90 hours of architecture, urban planning or spatial management in the obligatory curriculum and additionally a postgraduate course in spatial planning, urban planning or spatial management and also have experience of working in the planning industry for at least three years;
5. have finished studies other than above and additionally a postgraduate course in spatial planning, urban planning or spatial management and also have experience of working in the planning industry for at least three years plus have passed an exam on practical knowledge of laws concerning spatial planning;
6. are citizens of the European Union member states that have received the design qualifications that meet any of the above requirements and have an appropriate decision confirming this requirement.

The Chamber of Urban Planners in Poland is organised into two tiers. There is the National Chamber and four Regional Chambers. They are organised according to the general regulations of law on self-governments as well as internal regulations set by the organisation itself within the competences of the Board. The latter regulate national conventions, elections, qualification process for new members, disciplinary measures, finances and fees. When needed the chamber has the right to determine whether a member is following all the regulations and professional ethics and reprimand, suspend or even exclude from the chamber.

According to the resolution no. 5/2010 of the National Board of the Chamber of Urban Planners from 23 January 2010 there is a requirement for each member of the Chamber to improve their competences and qualifications. This process is assessed every three years. In that period the member has to gather points for actions such as: participation in training courses, lecturing in such trainings, receiving prizes or honourable mentions in urban competitions, postgraduate studies, receiving a scientific title in the field of urban planning or publishing articles referring to urban planning.

The idea of the above requirement is meant to ensure that all members are working on improving their qualification. Prior to 2010 once someone became a member there was no procedure of rechecking their qualifications, whether they follow the changes in law, market and contemporary design principles. This meant that members did not have any obligation to improve their qualifications nor to be actively involved in the activities of the Chamber. In practice there were ones that were very active and some that did not take part in any

additional activities. The authorities wished to fill this gap by such requirement and make sure that all members provide better service to the clients.

The first review cycle ended in 2012, and the majority of members have met the requirements sooner. There were however some that were not able to gather enough points and had to take supplementary training in the end of this period. It is too soon to assess the results in overall improvement of the members' qualifications, but there was a visible improvement in the participation rate in courses.

3. Teaching urban planning

3.1 Background – specific issues of planning education in Poland

To fully understand the background of developing the planning education in Poland one should get familiar with the specific issues concerning the learning process and the professional market in Poland.

When trying to define the roles of designers there are two main domains – architecture and urbanism. Both have their own professional chambers and responsibilities in the development process, as architects and urban (comprehensive) planners. In terms of education there also two main groups of programmes teaching the required skills – Architecture and Spatial Management. What is of importance is that being trained as an architect and having a diploma from architecture faculty allows to work both as an architect and an urban planner, whereas graduation from Spatial Management programme allows only the latter.

The above makes it difficult to shape programmes at Architecture faculties – whether they should train architects with some understanding of planning processes or focus also on more in-depth knowledge of urban matters for future planners. Most of the times it is the first case, which is also expressed by the interest of students. They enrol with the intention to become architects and are not much aware of the possibilities to work in the urban planning field. In this case there is more demand for urban design skills, which seems more appealing to students, rather than planning issues, which are treated as unnecessary and boring. Although after all some of the students will eventually work as professionals in the planning sector.

Gdansk University of Technology is a good example of Architecture faculty that has a programme in Architecture and Urbanism. Each school year (class) has around 150 students. Bachelor is 7 semesters long and Master takes 3 semesters to finish. That gives 5 years and approximately 750 students. All state universities in Poland are public, so there are no direct costs to the students, such as tuition. But they have to pay for their accommodation, books, prints etc. Most of the theoretical classes are lectures. This means a very passive way of passing on knowledge. There are many students attending. Exercise classes focus on utilising the knowledge from lectures in a practical situation (calculating construction, designing technical details, etc.).

The above differences in teaching systems may result in their different abilities to answer the arising demands of contemporary world. In this fast paced environment it is difficult to keep up with the new needs. We need to adapt to changing demands of the market, requirements of new policies and social needs as well as trends in planning and design. As nowadays graduates are more mobile we should also be able to teach them more universal abilities and knowledge than before.

Spatial Management programmes are quite different, as they are focusing on skills and knowledge related strictly to urban planning matters. These focus not only on educating designers that will be drafting master plans (which would be closest to urban designers), but

also regional planners and administrative staff in municipalities. There are 51 schools teaching Spatial Management in Poland at the moment. And what is of most importance that these schools are based on faculties in diverse scientific fields, such as e.g.: geography, forestry, management, economy and natural environment. This is both an advantage and a disadvantage. On one hand graduates have variable skills and approaches to planning, but on the other there are few elements that these schools and approaches have in common. These matters will be discussed more thoroughly in the following chapter.

3.2 Restructuring the curricula

There were some changes in the higher education system in Poland. One was readjusting the whole teaching process to meet the agreements of the Bologna Process towards consolidation in the European Higher Education Area. Some of the improvements implemented in Polish higher education were: introducing European Credit Transfer System (ECTS) making points awarded from different universities widely recognisable, dividing one cycle studies (Master) into two cycles (Bachelor and Master) and allowing better mobility of students and teachers as also collaboration at international level. The most visible impact of these changes was on reforming and dividing the existing 5 year full Master studies curricula to two cycle curricula in all cases. All higher education institutions have already adapted their programmes to these changes.

The second change stems from the European Qualifications Framework (EQF). These were set by the recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (Official Journal C 111, 6.5.2008). It was meant to make qualifications of learners transferable across Europe. It will make it easier for employers to recognise skills of workers from different countries by bringing them to one common layer. To obtain this all national qualification systems have to be adjusted to the European standard. From 2012 on all qualifications issued in Europe have to refer to the common European Qualifications Framework.

The legal framework of this reform in Poland is rooted in the Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications; ordinance of the Minister of Science and Higher Education 29 September 2011 on the standards of education for architecture and veterinary studies (published: Dz. U. z 2011 r. Nr 207, poz. 1233); and the ordinance of the Minister of Science and Higher Education 4 November 2011 on the standard effects of education.

According to the above regulations in higher education there are three levels of qualification: first cycle – Bachelor (or Engineer), second – Master and third – Doctorate. The learning outcomes have to be described in three fields: knowledge, skills and competences. They have to be described on reference levels: what the learner knows, what the learner understands, and what the learner is able to do. There are requirements at the national level for each field of sciences. These have to be included in detailed effects of learning at each programme. Finally these are broken down into detailed learning outcomes of each subject. In this system it is possible to trace which subject is “working” for which result in the educational process.

Another improvement that was implemented in the curriculum concerned grouping individual subjects together to form modules. The idea underlying this was to make modules interdisciplinary so that students benefit from a broader approach to one problem. For example auxiliary subjects – e.g. transport planning – were included with design studios into one module on urban design. In this case students will be able to correlate their transportation analysis with an corresponding urban design project. For programmes that were offered before these reforms it caused fundamental changes, and also many confusion among teachers. Different departments and professors had to work together on elaborating

a common description of the module and share responsibilities. They were not used to that before, and some had a very individualistic approach to their classes that they were used to.

At the moment there are two types of programmes thought simultaneously. For those started before 2012 (both Bachelor and Master level) the old curriculum is used. Whereas all programmes started in 2012 and later have to follow the new programme, that comply with the National Qualifications Framework.

3.3 Spatial Management programme at Gdansk University of Technology – case study

The new Spatial Management programme that was recently launched at Gdansk University of Technology is a very good example of a curriculum that is fully built upon the new regulations. It complies with the requirements of the National Qualifications Framework, offers a unique combination of subjects and teaching approaches. Therefore it can be treated as a model for building other programmes.

The above programme was elaborated as part of the European Union project “Development of the Gdansk University of Technology, Faculty of Architecture, by building new educational offer in the field of space management” (Human Capital Operational Programme Priority IV - Action 4.1 - 4.1.1, Competition number 2/POKL/4.1.1/2008). It is ongoing since 2009 and will end in 2014 and is co-funded by the European Union from European Social Fund. The Main Coordinator of this is professor Piotr Lorens, while Justyna Martyniuk-Pęczek is the Auxiliary Coordinator.

The main aim of the project is to develop an interdisciplinary teaching offer for Spatial Management at Architecture Faculty – both at Bachelor and Master levels. The latter will be taught entirely in English, which is a unique offer for the whole Central and Eastern Europe. There are two additional postgraduate programmes available Managing Spatial Development of the City, and Architectural and Urban Revitalization of Urban Areas. Both were developed as part of the EU project and are offered to students free of charge. Architecture Faculty students also benefit from the programme. A few hundred new and up to date books were purchased to retrofit the library with professional literature. A total of six scripts will be written and published with free copies available to students. The best students are offered paid internships in urban design companies and municipal offices. Current and prospective teachers prepared individual course programmes and lectures. They also benefit from taking part in funded study trips, individual development courses and programmes. The above together offers a very broad approach to improve the quality of teaching and offer a new Spatial Management programme.

The new Spatial Management programme (Lorens et al. 2012) was initially developed under previous regulations in 2010. It had to be thoroughly readjusted in 2011 and 2012 to match the new requirements of National Qualifications Framework. In this matter three elements were integrated together:

1. General qualifications for competences field that was elaborated as common requirement for the all faculties at Gdansk University of Technology.
2. Qualifications that have to be common for the Union of Spatial Management Schools, elaborated by the Task Force for Education and Career Development in the field of Spatial Economy at the Committee for Spatial Economy and Regional Planning, Polish Academy of Sciences (it will be described in the following chapter).
3. Originally and individually developed programme that based on the creators' individual experiences from teaching at Gdansk University of Technology as well as engagement at other universities internationally.

Generally the programme has been drawn upon grouping individual subjects into modules and thematic clusters. Together these work for one, common topic but also collaboratively add to interdisciplinary approach to the topic. This fits into the current needs of the market to

solve complex problems. As this curriculum has been drafted from scratch, before any of the classes started, it was much easier to coordinate different teachers and methods than in the case of Architecture programme, where tutors were already used to their previous methodology.

In order to manage the modules each one has been assigned a leader. That most usually is the teacher responsible for the most important subject or the most time consuming. They are in charge of the syllabus (merging syllabuses of single subjects) and coordinating qualifications framework to match general requirements. When the module is taught this person gives a final grade based on grades from individual subjects and their weights. The module as a whole is worth a certain amount ECTS points. All elements have to be passed in order to receive the final grade and ECTS points.

The full programme consists of subjects and modules such as: general contents, basic contents, major contents, diploma project and internships. General contents are mostly classes that relate to the technical profile and provide a basis for further development. These are for example foreign languages, informatics, philosophy, physics, law, economics and gymnastics. Basic and major contents are programme specific and relate to the Spatial Management field. Basic contents have three modules that give basic knowledge, skills and competences in development of space: graphic and presentational techniques; description and interpretation of space; and design basics. These contents are then developed further in six major contents modules: urban planning and natural environment; urban planning and society, culture and heritage; urban planning and economy; urban planning and infrastructure; urban planning and development policy; and regional planning and territorial self-governance. Each of these looks at spatial planning in a different context of various interdisciplinary approaches. Moreover each module has obligatory and optional elements (sub-modules). The student can choose from classes that differ in the method (traditional and workshop) or the project scale, location and scope.

In 2012 started the first year class of the Spatial Management at Gdansk University of Technology. It turned out to be the most popular programme at the whole university. We have received 480 applications with a rate of over 10 persons per one place. As a result of this popularity it was possible to choose the very best applicants and the programme immediately has become exclusive. The students are very capable and talented. This also creates demands for the teachers to perform at their best possible level. In a few years, when the first cycle comes to an end – the second Master level programme in English will start.

4. Organising for Spatial Planning / Union of Spatial Management Schools

4.1 *Committee for Spatial Economy and Regional Planning, Polish Academy of Sciences*

Polish Academy of Sciences (PAN) is a renowned and top Polish institution being an academy of sciences. It has two functions. One is to associate the most prominent scientists, and the second is managing the network of national institutes to perform the topmost scientific research. The Committee for Spatial Economy and Regional Planning (KPZK) is a part of this organisation. Its main objectives are to carry out research and expert consulting referring to regional policy and spatial policy of the country as well as institutional and legal aspects of planning at European, national and regional levels.

The Committee has brought into being a set of special task forces to work on specific problem areas. One of these is the Task Force for Education and Career Development in the field of Spatial Economy, led by professor Tadeusz Kudłacz. The author is a member of this group of experts. The main tasks are to ensure the most appropriate advances of the spatial

economy (or spatial management) programmes, cooperation between schools and serve as an expert panel for the future development.

4.2 Union of Spatial Management Schools

The main outcome of the Task Force was to found the Union of Spatial Management Schools. This is a formal organisation that associates 17 Polish schools that have Spatial Management programmes. These are: Gdansk University of Technology, Lodz University of Technology, Warsaw University of Technology, Wroclaw University of Technology, Warsaw University of Life Sciences, Warsaw School of Economics, Adam Mickiewicz Poznan University, University of Economics in Katowice, Cracow University of Economics, Poznan University of Economics, University of Lodz, Poznan University of Life Sciences, Wroclaw University of Environmental and Life Sciences, University of Agriculture in Krakow, University of Warmia and Mazury in Olsztyn, University of Warsaw and West Pomeranian University of Technology. In 2012 rectors of all these universities have signed the agreement.

The main aims of the Union are to (according to the 2012 Agreement):

1. Integrate the research and teaching society around the contemporary issues of highly qualified staff for spatial management.
2. Improvement of educational process with respect to the current trends in university education as well as present-day needs of the industry.
3. Taking actions in shaping a positive image of Spatial Management graduates among potential employers.
4. Overcoming the scientific development barriers in the field of Spatial Management by creating a separate scientific discipline, that would give the rights to grant scientific titles – this would be the most important and revolutionary change in the current situation and is described in the following chapter.

The above aims will be mainly realised through (according to the 2012 Agreement):

Cele Porozumienia realizowane są w szczególności poprzez:

1. Exchange of thoughts, opinions, information and experiences in the development of staff.
2. Agreeing on the core curriculum common for all schools.
3. Organising educational and scientific conferences for exchange of didactic experiences, also with invited guests from the industry.
4. Organising conferences for the society concerning the needs of practice for highly qualified staff.
5. Organising interuniversity and interdisciplinary research teams to undertake better joint projects in the field of Spatial Management.
6. Exchanging students and teachers, including organised field classes and internships.
7. Collaborating with international organisations related to training regional and spatial planning specialists.
8. Elaborating common promotional materials, that contain the characteristic of Spatial Management programme graduates as well as possibilities to take on the challenges of contemporary spatial planning needs.
9. Setting up Certification Committee that would monitor the quality of teaching Spatial Management programmes.
10. Collaboration with the Committee for Spatial Economy and Regional Planning, Polish Academy of Sciences and the Society of Polish Town Planners to improve the qualifications of staff and increase their competitiveness in the labour market.

4.3 Spatial Management core curriculum

In order to allow unification of teaching standards and some common elements of the programmes, a list of shared teaching effects (related to National Qualifications Framework) has been elaborated. These were set by the Task Force for Education and Career

Development in the field of Spatial Economy at the Committee for Spatial Economy and Regional Planning, Polish Academy of Sciences for all schools associated in the Union of Spatial Management Schools. All of them have incorporated these in 2012 while reorganising their curriculums with respect to the educational reform.

4.3 The new scientific discipline – Spatial Management

The schools associated in the Union of Spatial Management Schools represent different scientific fields. These range from economy and management, through architecture and geography to life sciences. But the most visible obstacle for further development is that Spatial Management is not a separate scientific discipline. This means that academic titles cannot be pursued and granted by faculty members of these schools in the common field. They can be granted but in various disciplines, and there is no common factor between these schools in that matter.

Therefore the Union of Spatial Management Schools has put forward a proposal to create a new scientific discipline – Spatial Management. The principles underlying this are that this field of studies will become more attractive to staff that will be able to pursue their career in the new discipline. Moreover, a common discipline would mean more independence of the individual schools from their original faculties.

As for the time being the proposal to create a separate scientific discipline has been drafted. It is being signed by the member schools and will eventually be submitted to the Minister of Science and Higher Education. Even at this moment there were some tensions and divisions. Mainly they concerned the science disciplines. At the moment it is agreed that Spatial Management would be interdisciplinary integrating the three following disciplines: economic, Earth and technical sciences. But there are some schools that have other backgrounds – life sciences, forestry and agriculture for example. In the end it was agreed that classifying the proposed discipline in more than three fields would be rather an obstacle in granting permission by the Ministry.

4.4 Accreditation

In Poland there is a statutory accreditation body for higher education. It is called State Accreditation Committee (PKA). The body is convened by the Minister of Science and Higher Education, based upon the law of 20 July 2001 that amended the Higher Education Law. The Committee has the right to assess the quality of teaching at all Polish universities both on the request of the minister and the accredited university. The State Accreditation Committee is the only official and statutory body that can evaluate higher education in Poland. All resolutions and opinions are binding. But its competences and expertise focus rather on general regulations than on discipline specific issues.

Union of Spatial Management Schools has discussed that it might be advisable to call another body, more specific one, that would assess the level and quality of teaching in the member schools. A similar concept has been analysed in the Association of European Schools of Planning (AESOP) during the workshops of AESOP Heads of Schools Meeting, 4-5 May 2012, held in Oslo. Although the main principle is reasonable and obvious, there might be a couple of inconveniences in pursuing this idea. Some of them have been identified as follows:

1. Schools differ much because of their different backgrounds, regulations and cultures. What would be the fair and justified set of issues assessed during this accreditation process?
2. Any committee would be drawn from the member schools' representatives, meaning that they would be assessing their own organisation. Then how independent this process would be?

3. Nowadays schools are competing with each other to have more students and have to be attractive. This is mostly aided by their reputation and the perceived quality of teaching. What about conflict of interests in this case?
4. There are also schools teaching in the same fields that are not members of these institutions. How would they be certified?
5. What will happen when there are remarks or faults identified? There are no legal means of requesting the school to improve on that.
6. Such accreditation would have to be recognised by the industry and prospective students to become a reasonable and effective method of assessment.
7. What are the possible means of funding such enquiries?

After discussing the above remarks and doubts both organisations (AESOP and the Union) have come to similar conclusions. For the time being, without any binding regulations, it would be best to form bodies or expert panels that would rather analyse programs of different schools rather than accredit them. This would be closer to a friendly peer assessment, where the results are confidential and for the assessed party only. In this case each school would know its weaknesses and could work on resolving these problems without the fear of losing its reputation. As a result the quality of teaching could be improved without the inconveniences of an open and public procedure.

5. Current issues – deregulation of planning profession in Poland

The last, but most current issue concerning planning in Poland is a proposal of the Polish government to deregulate some of the professions, including urban planning. This project has been started in 2012 by the Ministry of Justice. The general idea is to loosen the regulations that block access to many professions in Poland. Currently there are many licences, exams and additional requirements for people to be allowed to work in practice. Most of them are paid. In the face of crisis and unemployment, when more and more graduates have problems finding their jobs, the government wants to make these more accessible.

The process of deregulation is divided into three sets. The first one, already enacted on 13 June 2013, has opened 51 professions, including for example attorneys, real estate agents, geodesists and detectives. The second one is planned to apply to 91, and the last one – another 104 professions. The changes, varying depending on the profession, include for example shortening periods of gathering required experience, resigning from obligatory exams, closing institutions self-governing some of the professions. Some are more affected than the others.

By the second set architect and urban planner professions will be affected. The process is still in legislation, but on 23 July the project was accepted by the parliament and directed for further work. In case of architects there are for example shorter periods of gathering experience in designing and on the site. Not all applicants will have to pass exams, which are obligatory at the moment. But nevertheless their experience and abilities will be assessed.

In case of urban planners the modifications are much more fundamental. The requirements described in the previous chapter will be changed. The only prerequisite for practicing as an urban planner is graduating from designated studies, such as architecture, urban planning or spatial management or graduating from other higher studies supplemented by postgraduate courses in such fields as mentioned above. The institution of chamber will be entirely resolved with no need for professionals to be members if any self-governance bodies.

The rationale underlying this proposal, as presented by the government, is to make the profession more available. As urban planners work mostly for public offices, the requirement of checking the experience of a planner is to be verified by these offices, according to their

needs. The profession will no longer be defined as a public trust occupation, as the government believes that urban planners have direct contact only with public offices, not the society directly. As for ensuring the proper quality and level of professional experience this would be regulated by the market. In cases the urban planner breaches laws – there will be no disciplinary measures from the chamber, but they would be tried in court according to general laws.

There will obvious threats to the profession, if the governmental plan is carried out. There will be no institution capable of ensuring that the general abilities and quality of service in the profession is at any level of professionalism. Moreover the client will also have problems in executing this. In all public bids the choice of the winner is based on the lowest price only. And when there are additional requirements set to the competitor – there are suspicions of favouring some of them.

Probably deregulation of urban planning profession would also be against the graduates and unemployed. Now the crucial moment is to start working as an assistant and gather the experience to have it finally recognised by the chamber that grants membership. Later the membership is a proof of abilities. But after the changes, most of the clients will be asking the planners for proofs of experience working as a leader of certain types of projects. This will be easy to achieve by existing planners, but very difficult for those entering the market.

6. Summary

There are several comments and lessons learned from the matters presented above that summarise the situation of planning education and profession in Poland:

1. At the moment practice in the urban planning profession is regulated and controlled by the Chamber of Urban Planners, which is a self-governance body.
2. There is a requirement for the members of the Chamber to improve their qualifications by additional training.
3. There are two major groups of schools that teaching urban planning. One focuses on architecture, where urban planning is an addition. The second concerns spatial management itself.
4. Polish universities recently had to readjust their teaching programmes twice. First it was a result of dividing the one cycle Master studies into two cycle Bachelor and Master studies. Second concerned compliance with National Qualifications Framework that relate to European Qualifications Framework.
5. An individually developed Spatial Management programme at Gdansk University of Technology has been presented as a case study. It has successfully merged the requirements of the teaching reform with an innovative approach to teaching.
6. The Committee for Spatial Economy and Regional Planning, Polish Academy of Sciences has been working on development for education in the field of Spatial Management.
7. As a result of the above actions 17 Polish schools have formed the Union of Spatial Management Schools to integrate their efforts for development of the profession and teaching.
8. The Union has agreed on elements of core curriculum that will be common for all schools.
9. There are efforts to call Spatial Management a separate scientific discipline, which would allow better development of staff and professionals in this field.
10. There were discussions on additional accreditation of planning schools both at European and national levels. Both were not yet executed.
11. Currently the Polish government is planning to deregulate the urban planning profession in order to allow easier access for graduates. It will resolve the institution of Chamber of Urban Planners.

References:

Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications.

Law of 15 December 2000 on self-governments of architects, building engineering and urban planners (published: Dz. U. z 2001 r. Nr 5, poz. 42).

Lorens Piotr et al., Teaching Curriculum for Higher Education Spatial Management Programme at Architecture Faculty Gdansk University of Technology, unpublished, Gdansk University of Technology, Gdansk, 2012.

Ordinance of the Minister of Science and Higher Education 29 September 2011 on the standards of education for architecture and veterinary studies (published: Dz. U. z 2011 r. Nr 207, poz. 1233).

Ordinance of the Minister of Science and Higher Education 4 November 2011 on the standard effects of education

Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning (Official Journal C 111, 6.5.2008)

Resolution no. 5/2010 of the National Board of the Chamber of Urban Planners from 23 January 2010 on the detailed rules for the fulfilment of obligatory training of urban planners.

Union of Spatial Management Schools Agreement signed on 20 February 2012 by 17 universities teaching Spatial Management programmes, Warsaw, 2012.

Shaping the new planning curricula in the post-socialistic context – lessons from Poland and Russia

Piotr Lorens*, Dorota Kamrowska-Zaluska*

*Gdansk University of Technology, Poland

The planning education was, to a large extent, non-existent in the formerly socialistic countries. Therefore, after successful political and economic transformation, the need arised to develop the new planning curricula, focused on situation and problems that have to be dealt with in the context of post-socialist countries.

Introduction

Planning education is the issue widely discussed during various conferences and seminars, especially ones grouping the representatives of universities offering professional education in this field. But to a large extent this discourse is dominated by the realities and specifics of the highly-developed countries, which is also reflected in the structure of the organizations of universities offering those. At the same time planning education in these countries is in many cases limited to socio-economic issues, with no attempt towards dealing with physical planning or urban design. This situation is characteristic to many highly developed countries, as those of Western Europe or North America.

A different situation occurs in the post-socialistic countries, where the planning profession is traditionally dominated by graduates from the programs in architecture, frequently (and traditionally) treating planning as the “large scale architectural design”. Graduates of these programs have very little knowledge of the social and economic processes and are not ready to deal with modern planning regulation-making processes. At the same time, the cities in Central and Eastern Europe (as well as in other post-socialistic countries, including ones in various parts of the world) are in desperate need of modern planning solutions and planners able to deal with their problems.

New roles of planners in the post-socialistic countries

After the transition from communist and centrally planned economy to market-based system, the role of planners in Poland and Russia has changed. In the formerly socialistic countries, the majority of planning professionals had traditionally an architectural background, with some exceptions of e.g. transport engineers and economists who were dealing mostly with economic development strategies. In the past both spatial and economic development strategies were in most cases completely separated.

With the beginning of integration of strategic planning on all levels of the Central and Eastern Europe countries starting from local and regional up to national, new skills and interdisciplinary approach was needed. The planner is no longer only a creator of a vision plan or a large scale urban designer and even though some large scale development still happens, especially in Russia, in most cases planners work on small scale interventions.

Even if a large number of planners work in the public sector in local regional or national level administration, their role has changed. Some still are traditionally working on development control or land use regulations, as well as in the regional scale. But one has to note that

these regulations usually take form of new “zoning-like” documents. At the same time the traditional urban design is either vanishing (like in Poland) from the planner’s workshop or is preserved in the form of “large-scale architecture approach” (like in Russia). What is interesting, this also has consequences in using certain names: i.e. in Russian there is no widely used term for urban design, and the usual term of “city builder” is used for the traditional large-scale design of the city development plans, defining precise locations of new buildings but not much more. Similarly, in Polish the term “urban planner” is used for a person who just deals with zoning – and the broad sense of this term has been vanished.

But at the same time there is an increasing number of those who are managing development or working with new planning instruments. Some planners are negotiators, facilitators of participation process and managers of change. They are responsible not only for creating plans, but also for their implementation - improving the life conditions of inhabitants and delivering high quality spaces. To achieve this goal they have to understand economic and social aspects of the development process, be able to create durable partnerships with all actors of this process and understand their aims and needs. Numerous planners are working in private sector. Some of them owe their own companies so they need entrepreneurial and managerial skills.

Nowadays, most planners work either in administration or in planning offices, but this situation is already changing. Many future graduates of planning schools are going to work for NGO, some for non- and low-profit or quasi-public bodies, with very different organizational models. It is important to consider the types of skill they will need, especially that this kind of work very often requires versatility and flexibility. Some of them are going to work abroad or for international companies and need to be prepared to work in this context.

One of the most important aspect of the planning process is civic participation. However, the majority of practitioners in Poland – 62% of the respondents in the survey conducted by Wrocław University of Technology (Damurski Ł. 2012) - think that their education didn’t prepare them to conduct public hearings (a major step of regulatory public approval in planning process in Poland). The greatest doubts are expressed by graduates of architectural courses, who make up the majority of practicing planners in Poland.

In the end we can conclude that the new planning workshop is developing and knowledge about contemporary approaches is available, but planners frequently do not wish to use these. In fact, many of them still believe in the omnipotent role of the planning profession and tend to believe they know best and do not need to learn or use any other modern planning instruments.

Need for new planning curricula in the post-socialistic countries

The abovementioned changes imply that there is a need to rethink the curricula of the universities dealing with planning education within these countries. These changes and adjustments are needed on all levels of education, starting from undergraduate courses to postgraduate ones and finishing on mid-career programs for professionals already on the labor market.

Both in Poland and Russia new planning programs are being introduced. In Poland in the last decade new interdisciplinary spatial economy programs are emerging from Economic Geography, Business, Architecture and Agriculture Faculties. Depending on their roots, these programs have very different emphasis and focus. Also, the profile of their alumni

significantly differs. There was a need to set standards for knowledge, skills and competences, which the graduates of all planning programs in Poland should possess. A body which was deeply involved in this process is the *Committee for Spatial Economy and Regional Planning of Polish Academy of Sciences* with its *Expert Panel for Education and Human Resources Development of the Land Management Studies*. Finally *Union for Development of Spatial Management Studies* was created and 17 major planning schools in Poland are now its members. A new *Law on Higher Education* increased the dynamics of this process. In general it helped to relate national qualifications systems to a common *European Qualifications Framework* which was an important step; to compare the qualification levels of different countries and different education and training systems.

One of the examples of a new generation *Planning and Urban Design* curriculum is the program of *Spatial Management* course implemented in 2012 at the Faculty of Architecture of Gdansk University of Technology. The program is based on training modules, which consist of a theoretical part, as well as practical seminars, studios and field studies. The aim of the course is for its graduates to acquire basic knowledge, as well as important skills and social competence to be able to work in the development process (Ledwon S., Martyniuk-Pęczek J. 2012).

In recent years in many Russian cities, first of all in Moscow, but also in Sankt Petersburg, Perm and others, we can observe a significant number of new post-graduate planning programs. These initiatives are undertaken by both public and private institutions. One of the most spectacular examples is the *Strelka Institute*, a postgraduate school for media, architecture and design, which offers a 9-month postgraduate educational program in English, that focuses on the urban environment. Education at Strelka is cross-disciplinary and is combining economics, social and political studies as well as art & culture. Both lecturers - designers, architects, government officials, city activists and entrepreneurs - as well as participants come from all over the world. The alumni are prepared to work for both public and private institutions, to work in academia or to shape new urban movements.

As experience from wide range of programs and initiatives on national level in post-soviet countries should be capitalized, there is a need for international cooperation. This spring a consortium of high educational institutions from five EU countries including two from Central Europe, three universities from Russian Federation and two from Kazakhstan applied for TEMPUS grant for international cooperation in the field of planning education. The objective of the project is to modernize the planning education in Russia and Kazakhstan, in order to improve its quality and relevance to current situation. Development of effective planning education will help to support the economic growth of Russian and Kazakh cities. This objective will be met through creation and implementation of the new Master level program in Urban Planning and Development. The pressing need to develop new methodologies and models of education provides unique opportunity to have much wider impact on the national level.

Mid-carrier programs

There is more need for new under- and postgraduate planning curricula. People who are already working as planners frequently realize they need more knowledge in the specific areas. Also, the newcomers to the profession tend to look for the opportunities of getting the skills and knowledge required for their professional development. This also relates to the

process of reshaping their education and to developing planning skills among people who have different mode of education – like i.e. transportation engineering. In many cases they require new knowledge and abilities to strengthen their knowledge and gain new qualifications which they need in their everyday praxis. This is not only the case of professionals working in public administration or in local and regional development agencies, but also employers of private sector development companies or even research institutes with the spatial planning profile. Those planners often work in responsible positions, such as elaborating planning policy in local, regional and central administration, they lead comprehensive local development process working in local and regional development agencies or work as project managers in development companies, both for private and public sector.

A good example of such an approach are two mid-carrier programs: *Architectural and Urban Revitalization of the City Structures*, *Spatial Management of the Urban Areas* co-financed by the European Social Fund. These programs are taught at Gdansk University of Technology by professors from several Polish universities (Wroclaw, Silesia, Lodz) and also practitioners of different specializations, private and public sector, owners of planning offices, executives from public bodies and politicians. The programs started in 2009 and during its first editions the majority of students were architects and engineers who sought to widen their knowledge about the social and economic processes they dealt with in their work - the knowledge, which they lacked having only engineers' education. In later editions there were more and more urban planners, geographers, lawyers and civil engineers who, on the contrary, wanted to improve their physical planning or urban design skills.

A survey carried out every year shows that in both programs planners understand that opening to global and European trends in urban planning and changes in legislation is a cause for constant need for knowledge complementation. Adaptation to organization culture and the efficiency of learning are the skills that today must be constantly and dynamically developed. Moreover, more and more often the educational background does not determine today's career paths of planners in Poland. Polish employers often do not treat degree in a specific field as a condition to get a job; they often employ those who did not complete studies in planning, but people with a related degree, who have basic knowledge necessary to meet specific work requirements. The interest in this mid-carrier programs in the field of revitalization and spatial management is very strong. Students appreciate that most classes are in the form of study tours, workshops and design studios, which shows the need for practical education. There is a need for training experts to carry out the regeneration process and to work as managers of space in Poland. Highly qualified professionals with different specialties in regional and local governmental structures are required. Most respondents emphasized they had insufficient knowledge for the current position they held, resulting from the lack of broad enough undergraduate education. People participating in these courses want to become experts in the field of urban planning, fill the gap that exists in this area of the labor market, and thus count on career progression and improvement of their working conditions.

The Ministry of Science and Higher Education in association with *United Nations Development Programme Design Office in Poland (UNDP)* invited Polish Universities for partnership to prepare curriculum for postgraduate studies on Sustainable Human Development and Transition. Gdansk University of Technology will be responsible for the module concerning smart cities' development. It is also a way to propagate planning

education, especially that this program is addressed for the local and regional development actors. For the past six years the UNDP is also implementing, in cooperation with the Central European University of Budapest, a summer school in the field of social development. This school is addressed to officials and policy makers, postgraduate students and scientists from Central Europe and West Asia countries, as well as practitioners interested in the subject.

Conclusions

At present significant changes in the planning paradigm, such as recognition of traditional urban values, can be observed. There is a search for the ways of including them in the planning system. Moreover, there is also a rising understanding of what the planning paradigm should be based on: creation of urban spaces, participatory process leading to definition of the desired urban form and understanding the implementation powers (Lorens P. 2010). To make these changes happen, new curricula need to be involved in the urban design, planning skills and competences. Graduates should also have knowledge and understanding of the development issues, both in general theory, but especially those emerging from the political and socio-economic specifics of post-soviet countries. Not only socio-economic conditions, but also planning culture specific to these countries have to be taken into consideration. International cooperation and capitalizing different experience could be a useful tool to achieve these goals.

Under this condition there is a necessity of evaluation of the planning profession challenges: still some practitioners will be "traditional" regulatory planners, some will be "old-new" urban designers, but the rest will become "new" action planners. They have to be able to design urban space and be ready for undertaking the participatory processes (Lorens P. 2010).

Further challenges for planning education include further recognition of the needs, validation and verification of the present programs and courses offered in regard to requirements and paradigm changes. It is vital to link the educational offer with changes in planning system and new roles of planner.

Bibliography:

Damurski Ł., 2010. Rola planisty przestrzennego w procesie partycypacji społecznej: zachodnie idee a polska rzeczywistość, in: *Gospodarka przestrzenna społeczeństwu*, eds W. Ratajczaka i K. Stachowiaka, Bogucki Wydawnictwo Naukowe, Poznań, pp. 99-108.

Damurski Ł., *Wyniki ankiety internetowej "Gra o przestrzeń: urbaniści versus mieszkańcy"*, Spatial Economics Quarterly, Supplement: Raporty z badań, Nr 1/2011

Ledwon S., Martyniuk-Pęczek J., 2012. *Planning and urban design curriculum in the program of Spatial Management course – Gdańsk experiences in: Contemporary Challenges in Planning Education*, conference by Society of Polish Town Planners, Polish Academy of Sciences, Gdansk University of Technology, AESOP, ISOCARP and Sopot College

Lorens P., 2012. *Building Sustainable Cities – Challenges for Professional Education with Special Attention on Poland*, in: *Higher Education in Spatial Planning Positions and Reflections*, ETH Zurich

P. Lorens, D. Kamrowska-Zaluska *Shaping the new planning curricula...* 49th ISOCARP Congress 2013

Lorens P., 2010. *Needs and opportunities regarding the lifelong learning in regard to planning in Poland*, Istanbul AESOP, HOS Meeting

SHARED AND LEARNT LESSONS FROM LISBON

Designing the city and the territory from an Urbanistic viewpoint

Sofia MORGADO, CIAUD – Faculty of Architecture, University of Lisbon

Synopsis

The article addresses a systematised outlook from previous experiences in teaching syllabus and programs, research, active integration with theory and practice, especially at the Faculty of Architecture [Technical] University of Lisbon, within the 3 Cycles of the EU Bologna Agreement. The roles of Education, Research and Practice are to be referred in the wider context of a Contemporary Culture of the City.

1. Introduction

Unexpectedly enough, spatial planning does not merely stand for *expanding* the urban onto a *passive* landscape anymore. Did it ever? Or was humanity deterministically daydreaming of it, while the tentacles of *reality* were already taking over the actual urbanization?

Although functional changes start emerging since the 70's, the last decade has proven that changes are becoming progressively faster and calling for innovative approaches, that is to say, in recouping the design from the fabrics of the *terræ* themselves; *Some authors identify these options in a three-tiered approach* on how the synaptic and conjunctive fabric that forms the basis of the current City, evolves (for instance, seminal work by Paola Viganò at the Venice School: doctoral courses by design, pivotal design and planning such as greater Paris, with Secchi and Studio 09, and theoretical developments in several references; other references could be Waldheim at the Harvard University or Joan Busquets at the Polytechnic School of Catalonia/Barcelona and Harvard University and Llop, also at Barcelona).

In an attempt to go beyond the frontiers of Planning, the approach seeks to explore the condition of these days' cities – seen as a paradoxical state of *in-betweenness* both in the territories of practice and the ones of knowledge.

These concerns have raised the need to clarify realities holding different qualities - from urban and infrastructural, from rural to what is understood as *natural* - and the vital skills to intervene accordingly in the best local interest. At the same time, societal dynamics, economic trends, job and production relocation have opened - if not enforced - questions which are often answered very differently, depending on the geographic area and, as such, on backgrounds and culture.

The article stems from a preliminary systematisation outlook from previous experiences in:

- Urban design and planning studios within the general layout of teaching programmes
- Frontier and applied research as ways of reasoning reality and look for alternative answers and
- Integration of education activities with present-day topics both in theory and practice.

While further development would still be needed, the paper seeks to explore these topics by drawing a three folded approach:

1. Contextual approaches from a cultural perspective – Planning Cultures in Europe and the role of Urbanism;
2. The field of urban design and planning education - Oriented didactics and learning strategies;
3. Education, Research and Practice - Contributing to interconnected activities in a cross-border, trans-disciplinary line; recent experiences.

The last topic will be developed in its own presentation (debate at the ISOCARP Forum of Education), thus only sketched in the concluding part of the paper, as *an open agenda* for discussion.

2. Contextual approaches from a cultural perspective

The word *Urbanismo* was born from a Spanish neologism *urbanización*, rooted in the Latin etymon *urbs*, when Cerda faces the need to invent new words to name urban phenomena, while he was designing the *Eixample* Plan for Barcelona. His theory, in 1867, would give rise to a new professional field, expressing a specific culture of building cities, with resort to an architectural lexicon, much attached to the places themselves. It was a major contribution to a paradigmatic epistemology of the city, persistent until these days in the neo-Latin speaking countries.

In the USA, *metropolitan* is the expression and aim of the Urbanism itself. And of course the core of the *City Beautiful theory*, much in line with the English common Law system, the referent to the Anglo-Saxon way of “building” cities. Only, cities would also become the most symbolic expression of the power of men, by inventing power infrastructures and machines, sky defying buildings (Chicago or New York), yet designing them as classical as possible.

Still, *Urban Design* (coined by Abercrombie and Forshaw, cfr. Shane, 2011: 9) would only appear as an autonomous professional activity after WWII, in order to fulfil the need to rebuild housing and to deal with the “car” effects on the urban. After previous attempts, Abercrombie would articulate different levels of planning, and finally implement the first urban sprawl containment tool: the green belt, on grounds made public by the force of law (1945).

Modern would then become a sort of urban Esperanto, by promoting functionalism, sometimes indifferent to local singularities and cultures. In the urgency of the post war, *modern* becomes *normal* – an easy way to build fast commuting cities – suburbs became suburbia, a mere stereotype of once beautiful urban ideals. Sometimes a caricature of what city and citizenship should mean. After WW II and in a period marked by successive crises, the end of the *Cold War*, Cartesian and Rationalist as fundamentals in the Modern unity would be inevitably discarded. From the 70’s onwards, the Post-“something” starts leading: post-Industrial (D. Bell, 1967), Post City Age (Melwin Webber, 1967), *Posturbain* (Françoise Choay, 1970), Post-modern condition (Lyotard and Harvey), amongst others.

Vattimo would state the acceptance of what is human, ephemeral, and erroneous. Jürgen Habermas would focus on communication, the public realm, and everyday life. The European political reconfiguration after the fall of the Berlin wall in 1989 and its enlargement start introducing a new era, introducing a current conjuncture that put emphasis on:

- Neoliberal models, namely in the government of cities (ex: London)
- Regional separatisms leading to cultural differentiation (ex: Spain)
- Post-secularization exacerbation (ex: Islamic Spring from 2010, amongst others).

In Urbanism two main paths would unfold thereon:

- Post-industrial with concrete functional and configuration effects - regional
- The Postmodern aesthetics – sometimes too local.

Generally speaking, from there after *Urbanism* would mean the same as *Urban Design*. Urban and Regional Planning, conversely, would take over the leading role in the functional and pragmatic development of the urban, thereby unintentionally designing Cities,

with much loss to the public realm diverse qualities, the perception of citizenship and diversity, only recently recouped.

This would occur either from an entrepreneurial or real-estate position, in line with *strategic planning* ideas, or from a *sectorial perspective* (e.g. infrastructures), to where the welfare state would start retreating, mostly acting at the regional level.

Grounds and Backgrounds

One of the most recurrent questions in this broad field of work lies in the necessity - required by the dialectic between actors coming from different backgrounds (scientific fields and complementary actions) which share the same object – to bring some light into the differences between Urbanism and Urban Planning. While substantive, there is no final answer in sight, since different scientific viewpoints have been leading to different understanding and really is of course somewhat complex.

In this case, the arguments lay from the urban point of view. The other perspectives are unquestionably relevant; however this approach holds on to resources which are often dismissed, even if they are the roots of the urban development itself, such as place, people and their ways of living – their cultures and landscapes.

It is undeniable that human beings, their societal structures, the development of their activities from the most elementary (driving a car, for example) to most complex involving manifold activities and infrastructures (e.g. an airport) unfold in:

- i) Space, with dimensions and characteristics materiality conditioned by their own conditions, and
- ii) A time span, with its own rhythmic of events and circumstances.

In addition to dynamic contours and flows, difficult to determine in these terms, people live in an environment determined by their own physicality, as well as by the surrounding territory, designing cultural roots, the content of the landscapes, traditions and customs.

In the case of Southern Europe, the attachment to place is particularly important, thus, expressed in various forms. City is understood as a value of permanence that unsurprisingly extends to landscapes of various hues.

With this starting point, Urbanism stands for a particular way of seeing, analysing, designing the territory. Formal acknowledgment by the EU (European Communities, 1997)

follows, and is followed by several authors after, the idea of a broad and diverse systemic framework with regard to the city.

The need to connect the characters of the territory with the process of intervening in it, by resorting to specificities of the urban lexicon and how this impacts on planning was also examined in the research project *Super Cities - Sustainable Land Use Policies for Resilient Cities*, offered an opportunity to clarify some of these aspects in an integrated perspective (Pinho, P. et al 2011; Morgado, S.& Dias, L., 2013) based on documents of the European Union and renowned experts (et al, 2010, EC 1997 and 1999, among others).

After a documented study of metropolises in their urban, environmental and socio-economic contexts, planning systems were also analysed: i) the specificity of urbanism as Southern Europe, with the example of Portugal, ii) Sweden as distinctive in terms of inclusive, integrated approach, iii) economic and regional perspective in the Netherlands, and iv) management of land use as a strategic tool in Turkey. This study allowed understanding some relationships between policies and options contained in agreements signed within the European Union and their respective impacts when transferred into national legislation (Morgado & Dias, 2013)

This approach allowed as well for a contextualization of the role of Urbanism within the Faculty of Architecture of the [Technical] University of Lisbon and the pivotal role of *design* in the syllabus of the three cycles of Bologna Programs (Bachelor, Master, Doctor).

TIME FRAMEWORK ACCORDING TO PERIODS OF PLANNING

	Ideas for the Metropolis; Key topics	Main urban developments
Fordist Industrial Models Modern City	Physical Planning, Formal Urbanism: Modern and Garden City Concepts Urban Expansion Port and Railway development Green Belt Concept /Rural Transition Housing development Metropolitan centralities and land uses Key infrastructures and centralities	Sprawl
Post-fordist Post-industrial Models Knowledge and creative based economies	Strategic Planning, Plan-Process approach: urban requalification and regeneration concepts Metropolitan corridors and ecological network Urban requalification, heritage and sustainability	Sprawl, Shrinkage
ESDP (Postdam, 1999) Sustainability; Polycentricism; knowledge infrastructures	Resilience-oriented planning concepts and policies: multi-level, flexibility, adjustment capacity [translation of our attributes into the planning tools each case raised]	
Lisbon Strategy (Lisbon, 2009) Territorial Cohesion and Competiveness	Metropolitan centralities and sustainability Metropolitan Ecological Network, Environmental and risk assessment, Shrinkage prevention – mixed land uses and higher connectivity and multimodal networks	Sprawl, Shrinkage, Polycentricism
Strategic Planning → Territorialism Integrated Systems Giving evidence to a territorial body; <i>Planning is Spatial</i> (Pain, 2010)		

Source: Morgado, S (2010)

3. The field of urban design and planning education - Oriented didactics and learning strategies at the Faculty of Architecture, Lisbon

The Faculty of Architecture at the [Technical] University of Lisbon (further information available at www.fa.utl.pt), offers teaching programmes in line with its design-oriented structure based in Architecture, Urbanism and Design

Since 1992, this understanding would be translated into the creation of new degrees, in the fields of Urbanism and Design, as well as MSc Programmes that would later adapted be and further reviewed, following the *Bologna Agreement*. These actions represented an innovation in the context of national Architecture and Urbanism, allowing the school to become a pioneer in the pedagogical, scientific and scholarly in these areas, as well as in the schools' of architecture panorama, even internationally speaking.

Current programs have been updated, according to national legislation and accreditation procedures by the National Agency (A3ES) and renewed version are to be introduced already from September on, in 2013/14.

Teaching Programs in Urbanism

In the context of cultures, Urbanism is a relevant agent of the expression an expression of societies culturally advanced, in the change of the territory. Therefore it is recognized as a fundamental activity and constitutes a privileged object of study and in the history of contemporary thought.

Also for these reasons, it is relevant material for research and education in the most prestigious schools of architecture, particularly in Brazil, France, England, Spain and the United States of America, among others.

Under the scope of the *Bologna Agreement* and its due implementation, the Faculty of Architecture offers teaching programs in Urbanism in its 3 cycles.

Therefore Bachelor and Masters Degrees form a single body. At the end of the 1st cycle, students receive a bachelor's degree in architectural studies, with direct access to the 2nd cycle of expertise in the field of Urbanism.

Upon its completion they may apply to be granted the professional title, under the conditions established by the Architects National Professional body (Ordem dos Arquitectos

Portugueses), since the syllabus of the programme is organized in accordance with European Directive 2005/36/EC

In its various profiles - in which Urbanism is included - the teaching of architecture, supposes a didactic founded in the conception of space and its various design dimensions: spatial, aesthetic, technological and cultural. In particular, the Master in Architecture with specialization in Urbanism is not an exception to this. In the Architectural and Urban Design Studios, topics range from the metropolitan perspective to urban design and architecture, mixing relevant issues – public space, resilience, demographic challenges, and so forth - nationally and internationally speaking.

The education need to become an Architect, relies on the acquisition of a diverse set of skills, mainly established from an increasing complex vertical structure where Studios are fundamental. It is in this perspective that the group of Design Studios establishes trends and general characteristics, but also defines expertises in the fields of Architecture and Urbanism. Didactics result to experimental methods, encouraged by the development of monitored assignments, individually or in small groups, stimulated by the proximity to the teaching team.

Further to the professional level granted by the Master, an important effort towards an up-to-date life-long education was made. The Doctoral Program in Urbanism (which evolved from traditional individual supervised processes) and post-graduate programs, urbanism related, that may vary according to audiences and panoramas (e.g. Advanced Studies Programs in Portuguese Urban Culture or in Computation applied to Architecture, Urban Planning and Design, amongst others) have been introduced with very positive results so far.

Master of Architecture with specialization in Urbanism (1st + 2nd Cycles)

This profile has as main objectives a strong background in architecture with specific practical and theoretical focus on Urban and Architectural Design, as well as Urban Planning. Professionals with training in this area find opportunities ranging from architecture and urban planning offices and private companies to municipalities and other public bodies such as universities.

The 4th year curriculum is the preferred grade to resort to international programs and protocols of exchange (such as Erasmus, Smile, others), aspect that the implementation of the new Bologna cycles intensified. As such the 2nd cycle plays a key role, both in the progress of program and in its external visibility. The Design Studio courses play a

fundamental role in the coordination and liaison with the *corpus* of each semester, according to the character of each scientific field.

Recent experiences have shown some interest in deepening work started at an earlier stage (e.g. at the 4th grade), in order to complete the Final Thesis (which may assume the form of a detailed Design Assignment or a written research). Thus, the 5th grade is pivotal to the access to the profession after the successful assessment of the Final Assignment. This must show autonomy, ability to develop intellectual challenge, and skills to frame a complete and complex exercise in terms of maturity and scientific criticism.

Doctoral Program in Urbanism (3rd Cycle)

The University [Technical] of Lisbon, via Faculty of Architecture grants the degree of Doctor in Urbanism and holds the responsibility for implementing the program leading to it. The 6 semester's program corresponds to 180 ECTS.

The Doctoral Program in Urbanism would be approved in the Scientific Council in 2007 with a view to registration in DGES - Directorate General of Higher Education, which would occur in 2008, under the n.º R / B-AD -63/2008, in the context of the creation of the three Bologna cycles. Nowadays the Faculty offers 3 different Doctoral Programs in its main fields: Architecture, Urbanism and Design. The Faculty form also part of networked doctoral programs, with other institutions.

The Program in Urbanism, promotes the spatial and cultural qualities of the City, its reciprocity with the land uses, dynamics, and social groups. This allows providing training that is specific, complementary and not overlapping with other Doctoral Programs, in urban-related fields, such as Social Sciences or Engineering in other Faculties and Universities. Doctoral Programs with a specific dimension in the fields of social sciences, environment and infrastructure, widely recognized, follow different methodologies with the aim of representing and explaining various facets of the same object: the City nowadays.

4. An open agenda

Education, Research and Practise go together well in the experimental environment that have be fostered in these programmes, by triggering new agendas, but also by including consistent backgrounds and know-how.

As such, while teaching syllabuses always try to include up-to-date topics, they are usually framed by mature theoretic research and stakeholders are called to draw attention

and provide technical assistance to the Design Studios process (e.g. the bi-univocal involvement of municipalities and the classes).

Sometimes, singular events are organized in the form of workshops to intensify the debate and brainstorming around a specific issue. That has been the case of several ones, such as the workshop “from splinters to Parks”, (available at: <http://metropolis.fa.utl.pt/metropolis.htm>) organized at the Faculty of Architecture, last May with the endorsement of the ISOCARP.

A steady network of colleagues from different Universities, the cooperation of different institutions and stakeholders, but above all the enthusiastic participation of the students allows drawing a preliminary positive assessment.

Other experiences will follow soon.

5. References

- A3ES - Agência de Avaliação e Acreditação do Ensino Superior. [Ministério da Ciência, Tecnologia e Ensino Superior, Decreto-Lei n.º 369/2007, de 5 de Novembro] Disponível em <http://www.a3es.pt> [Acedido em 10 04 2012]
- Decreto-Lei nº 74 /06, D.R. I Série A, 60 (24-03-2006) 2242-2257 [Processo de Bolonha, Ministério da Ciência, Tecnologia e Ensino Superior]
- Deliberação n.º 1487/06, D.R. II Série, 207 (26-10-2006) 23436-23438 [Regulamentos de Mestrados e Doutoramentos, Universidade Técnica de Lisboa]
- Despacho n.º 15866/08, D.R. II Série, 110 (09-06-2008) 25592-25595 [Adequação do Curso de Doutor em Urbanismo, Faculdade de Arquitectura, Universidade Técnica de Lisboa]
- Despacho n.º 19225/09, D.R. II Série, 160 (19-08-2009) 33841-33843 [Alteração do Curso de Doutor em Urbanismo, Faculdade de Arquitectura, Universidade Técnica de Lisboa]
- Despacho nº 1354/2012 D.R. II Série, 201 (17-10-2012) 34524-34527 [Ciclo de Estudos de Doutoramento em Urbanismo, - Alteração e Anexo ao Despacho Reitoral n.º 117/UTL/2012]
- Dühr, Stephanie; Colomb, Claire & Nadin, Vincent, (2010) *European Spatial Planning and Territorial Cooperation*, London: Routledge.
- DUOT/ETSAB/UPC, *Master universitari en urbanisme*, consultado a 29-08-2012, disponível em <http://doctorat.upc.edu/programas/urbanismo>
- European Communities (1997) *The EU Compendium of Spatial Planning Systems and Policies*, Luxembourg: Office for Official Publication of the European Communities. Available at <http://www.espace-project.org/old/reading.htm>, retrieved on 25-09-2010
- European Communities (1999) *ESDP. European Spatial Development Perspective. Towards Balanced and Sustainable Development of the Territory of the European Union*, Luxembourg: Office for Official Publication of the European Communities. Available at http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/som_en.htm, retrieved on 25-09-2010
- FAUTL, 2007, *Dossier da Licenciatura em Arquitectura do Planeamento Urbano e Territorial para Processo de inclusão na lista anexa à Directiva 85/384/CEE de 10 de Junho, em apreciação DGES - Direcção Geral do Ensino Superior*
- FAUTL, 2003, Faculdade de Arquitectura da Universidade Técnica de Lisboa, Disponível em <http://www.fa.utl.pt>
- IfEU/Bauhaus Universität Weimar, *International Doctorate Programme European Urban Studies (IPP-EU)*, Institute for European Urban Studies (IfEU), Universität Weimar, consultado a 29-08-2012, disponível em: <http://www.uni-weimar.de/cms/en/architektur/ifeu/menue-links/home.html>
- Knieling, Joerg & Othengrafen, Frank (ed) (2009) *Planning Cultures in Europe. Decoding Cultural Phenomena in Urban and Regional Planning*, Urban and Regional Planning and Development Series, Farnham: Ashgate.
- La ciudad mosaico territorial*, consultado a 29-08-2012, disponível em <http://www.ciutatmosaicterritorial.com/es/doctorado/>

MAOTDR, 2007, *PNPOT - Programa Nacional da Política de Ordenamento do Território*, Lisboa: Ministério do Ambiente, do Ordenamento do Território e do Desenvolvimento Regional, Jorge Gaspar (coord.). Official Report retrieved from <http://www.territoriportugal.pt/pnpot on 23-04-2009>.

Morgado, S., 2013, *Agregação, Relatório sobre o Programa de uma unidade Curricular [Territórios Metropolitanos, Cursos de Doutoramento em Urbanismo], 77 p. e Lição de Síntese [Territórios da contemporaneidade] (Reports for the obtention of DSc/habilitation)*.

Morgado, S.; Dias, L., 2013, «Chapter 6: Systems, cultures, styles: spatial planning in Portugal, Sweden, the Netherlands and Turkey». In *Resilient Thinking in Urban Planning*, Eraydin & Tasan Kok (ed), Series: GeoJournal Library, Vol. 106, New York: Springer

Morgado, Sofia, 2010, *Projecto científico-pedagógico para uma unidade curricular da área disciplinar de Arquitectura [Laboratório de Arquitectura III, Mestrados Integrados em Arquitectura, nas suas várias especialidades, no 3º Semestre, 1º Ciclo conducente ao grau de licenciado em Estudos Arquitectónicos]*, Candidatura ao Concurso documental internacional para recrutamento na modalidade de contrato de trabalho em funções públicas, de duas vagas de Professor Associado, na área disciplinar de Arquitectura, da Faculdade de Arquitectura da Universidade Técnica de Lisboa, publicado no Edital nº 992/2010 publicado no Diário da República, 2ª série – Nº 198 – 12 de Outubro de 2010. (documento de acesso restrito), 25 pp.

Pinho, P. (coord) and Research Team, 2011, *Super Cities - Sustainable Land Use Policies for Resilient Cities*, relatório de investigação apresentado à FCT, Porto e Lisboa: FEUP & FAUTL, Fevereiro, 404 pp, disponível em: <http://citta.fe.up.pt/projects/1.20-sustainable-land-use-policies-for-resilient-cities-super-cities>

Randstad Spatial Planning Randstad Centre for Strategic Spatial Planning and Design, Chair Spatial Planning and Strategy, Department of Urbanism, Delft University of Technology, consultado a 29-08-2012, disponível em: <http://www.bk.tudelft.nl/en/about-faculty/departments/urbanism/organisation/chairs/spatial-planning-and-strategy/>

ULAB, Laboratory for research on complexity of cities and landscapes, Chair Spatial Planning and Strategy, Department of Urbanism, Delft University of Technology, consultado a 29-08-2012, disponível em: <http://www.bk.tudelft.nl/en/about-faculty/departments/urbanism/organisation/chairs/spatial-planning-and-strategy/>

‘From Pedagogy to Paideia’: Physical Planning Education in Nigeria

Olusola OLUFEMI, University of Ibadan, Ibadan, Nigeria

Usman Umar JIMOH, University of Ibadan, Ibadan, Nigeria

Abstract

Moving from pedagogy to paideia (Py-dee-a) in planning entails practical civic engagement and authentic dialogue with the community through collaborative rationality in planning education in Nigeria. Planning education is changing from the normal spaces (classroom) to the virtual spaces (online teaching, Webinar, Twitter, Facebook, blogging, LinkedIn etc.) and the adoption of GIS and other new technologies. Pedagogy is the art/science of teaching, which is the methodology while paideia is the education of the whole person. Paideia is a system of education or learning that empowers the planner to focus and situate planning within the context of a person’s assets (intellectual, physical, spiritual, social, natural, political, environmental and financial capital). In what ways do Planners seek to achieve Paideia or just Pedagogy? This paper contends that physical planning education should seek to impart knowledge and empower the whole person planner in attempts to produce new knowledge, skills and imaginaries that prepare practitioners to inform, influence and integrate new frontiers in planning.

Introduction

Urbanization of poverty and spaces; and urban sprawl with pockets of impoverished ghettos in the middle of affluent neighbourhoods, hyper mobility and changing urban lifestyles are seemingly becoming the norm that planners have to address. “In many countries planners are increasingly exposed to and challenged by a hyper-dynamic context that tends to characterize socio-economic as well as environmental change in a highly interrelated, increasingly urban world” (Rau, 2012:15).

For instance in Nigeria the population is estimated to be about 193m in 2020 (was 158m in 2010) (UN-Habitat 2008) and the population, extended metropolis and urbanization dynamics poses a huge challenge for planners in the country. There are about 44 Planning Schools in

Nigeria located in urban and peri-urban areas and 2673 registered planners in a country of about 160million people. The high-speed and hyper-dynamic urban change requires a fast forward response (Rau, 2012) or even a forward looking response. However, greater breadth of knowledge among planners is required to plan effectively (Friedmann 2005a; Irazábal, 2008a) to respond adequately to the challenges our human settlements are facing in the 21st century. “A planner must learn to be jack of all trades. Today’s planner works in a complex intergovernmental web of plans, policies and regulations. Planners must have the patience and understanding to work in a changing world of politics. Planners must comply with a large body of land use law, make reasonable forecasts, need a knowledge of economics, understand the fiscal situation and how to protect the environment”(So and Getzels, 2009:241). Thus, between expanding and shrinking settlements, planners inevitably need to re-tool both in teaching, learning and practice. It is no longer business as usual for planners. Planners need a new dynamic in their approach to planning human settlements and responding to the challenges.

The approach by various planning schools should move from pedagogy (traditional planning) to paideia (problem solving) to able to address these problems and achieve tangible and with realistic outcomes. Pedagogy is the “art, science or profession of teaching” (Webster’s New Encyclopedic Dictionary, 2002:1345; Abercrombie et al, 2006:289). Paideia, on the other hand has been defined by Adler (1982) as “... signifying the general learning that should be the possession of all human beings”.

Lucus (1972) observes that the focus on means rather than ends, methods rather than objectives, results in exclusive concentration on pedagogical and administrative emphases, and in the student with a focus on the utilitarian end of acquiring marketable skills and competencies in the universities. Students become manipulated to become nothing more than “instruments of production” by business or industry (Lucus, 1972:8-9). Seemingly, students rather than acquiring the skills and knowledge to allow them to solve problems, only acquire knowledge that is inapplicable (theory without practice) and their focus is to graduate and get a job (any job as long as they are employed). These are the challenges brought about by the complexity of urbanization, poverty and unemployment.

This paper contends that physical planning education should seek to impart knowledge and empower the whole person planner in attempts to produce new knowledge, skills and imaginaries that prepare practitioners to inform, influence, innovate and integrate new frontiers in planning. Engaged acclimatization and collaborative rationality moves planning from

pedagogy (methodology or planning content) to paideia (planning context, intellectual excellence and practice) specifically in Ibadan School of Planning.

Using data from secondary sources, this paper gives a conceptualization of pedagogy and paideia, an overview of planning education in Nigeria focusing on the Ibadan School of Planning (ISOP) (often referred to as Department of Urban and Regional Planning) and the embeddedness of paideia principles in ISOP's program using examples of the Sustainable Ibadan Project and the University of Ibadan master plan as attempts to promote intellectual culture and forge authentic civic engagement and collaborative involvement of students, faculty and the community. The paper suggests Planners require a new response, new knowledge and skills; and a new intellectual culture (paideia) to respond to the challenges brought about by urbanization, population growth, poverty and climate change. Paideia should be seen as an innovative and integrative approach to respond to these hyper-dynamic, hyper-mobility and high-speed changes in the environment.

Conceptualizing Pedagogy and Paideia

This section gives a conceptual explanation and definition of terms used in the paper. It defines education, learning and teaching. It also gives insight into the meaning of pedagogy and paideia. Definition, clarification, pedagogy, paideia.

Education, as an institution, is responsible for the transmission of particular knowledge, skills, values and attitudes deemed desirable in a given society (McClinchey, 2013:237). Education is a means of producing good citizens (Bromley, 2011; Osborne, 2000). Formal and informal education contributes to social reproduction; that is, by stressing societal norms and values, education works to socialize next generations (McClinchey, 2013:237). Education is the action or process of educating or being educated; knowledge and development resulting from an educational process (Webster's New encyclopedic Dictionary 2002:577).

What planning education does is to provide the knowledge, skills, training and development through teaching and learning. This in turn informs and influences the behavioural tendency and the social reproduction and engagement of the planner in practice.

Pedagogy is the "art, science or profession of teaching" (Webster's New encyclopedic Dictionary 2002:1345; Abercrombie et al, 2006:289).

According to Abercrombie et al (2006:289) distinguished between conservative and liberal pedagogy:

- Conservative or closed pedagogy sees learning as the absorption of specific bodies of knowledge, regards the child's ability as determined by hereditary and environmental factors, external to the school, identifies appropriate teaching style as one where teachers are experts, have authority over pupils and direct learning subordinates, and sees curriculum as the relevant classroom knowledge as defined by teachers.
- Liberal or open pedagogy conceives learning as a process and not the acquisition of specific knowledge, the child's mind as capable of development, teaching as simply guiding this development, and curricula as tailored to suit pupils' owned expressed interests`.

The spread of 'progressive' and 'child-centered' teaching methods since the 1960s, the open pedagogy, has been interpreted in different ways (Abercrombie et al, 2006:289). Freire (1972) argues that the open pedagogy has radical political implications because it emphasizes personal autonomy rather than social control, others claim that fully developed 'progressive' methods are rarely found beyond the early years of the primary school and are unlikely to have any lasting influence on attitudes, or that open pedagogy reflects the middle-class value system and is therefore unlikely to have radical implications beyond the school. Bernstein (1977) suggests that the manner in which schools modify 'progressive' ideals in practice suggest that pedagogical practices remain fundamentally conservative.

Beauregard (2003: 110) asserts ``University based education appeared in the late 1920s and remained relatively vocational until after World War II. At that time, planning education began to fracture into two camps: practitioners with professional degrees and theorists ordained as doctors of philosophy. Moreover, education became not only an occupational gateway but also a strong link between the practice and theory of planning, and between the actions of planners and the ideology that encased them`.

Beauregard (2003) notes the pedagogical model of lecture and seminar; knowledge was fragmented into sub disciplines and students learnt through texts rather than direct problem solving gives planning graduates only a dose of on-the-job training was needed and it severs professional training from academic training by creating a career path for teachers of planning that did not necessarily intersect with planning practice.

Beauregard (2003:111) notes ‘the combination of an academic pedagogical model, severance from practice and creation of alternative career paths was fertile ground for the emergence of abstract theorizing distanced from the performative demands of practitioners’.

However, conversely, there are significant regional variations in terms of the relative importance given to technical skills, communication skills and analytical skills in planning curricula in the various planning schools globally. The variations are linked to the prevalence of policy/social science approaches, as opposed to physical design. For example planning schools in Asia rate analytical skills as most important, followed by technical skills and then communication skills. In Latin America, technical, rationalist perspectives are then the norm, with skills such as master planning, urban design and econometric modelling being more common than those of participation or negotiation (UN-Habitat 2009: xxvii).

However, ‘planning education has grown exponentially and diversified broadly in the last 100 years. Most schools have reconceptualised planning from a rational modernist perspective and have come to emphasise deliberative and participatory processes that advance civic engagement and promote citizen participation’ (UN-Habitat, 2009:197).

‘Urban planning education in most countries has moved from a focus on physical design towards an increased focus on policy and social science research. Graduates from planning schools focusing on physical design find themselves increasingly marginalized in a situation where planning processes progressively require knowledge of issues related sustainable development, social equity and participatory processes’ (UN-Habitat 2009: xxvi).

Planning education in Nigeria until now has been dominated mainly by social science thinking, a thinking which also influenced the location of planning schools in many universities (Falade, 2003). The Ibadan School of Planning continues to differentiate itself from other planning schools in Nigeria by adopting current methodology and embracing paideia through engaged acclimatization and collaborative rationality.

Paideia is a system of education or learning. Paideia in physical planning would look at the character of cities, communities and virtues, acquisition of knowledge. The aim is true planning knowledge and the end is sustainable, liveable, prosperous and tolerant human settlements.

Adler (1982) defines paideia as ‘... signifying the general learning that should be the possession of all human beings’. Lewis Mumford (1961:56) used the phrase ‘from pedagogy to Paideia’

when discussing university city as the Greek word that means “rearing and education of the ideal member of the polis. It incorporates both practical, subject based schooling and focus upon the socialization of individuals within the aristocratic order of the polis. An ideal member of the polis would possess intellectual, moral and physical refinement”. In Greek paideia is the idea of perfection of excellence (Werner, 1945; Oxford English Dictionary, 2005).

In the rearing (nurturing or making or learning process or the process of becoming a planner) and education of a planner, in addition to the content of planning, the context of planning is very crucial in achieving excellence in practice.

Mumford (1961:168) asserts `this education of the whole man, this paideia as Jaeger has called it to delimit it from a narrower pedagogy, has never been equalled in another community so large`.

Lucas, (1972:8-9) indicates `` The older goal of universities to gather up the surrounding culture in all its breadth and complexity, to organize, systematize, and render it coherent to a group of students was called “paideia.”

Paideia situates planning challenge or problem within the whole context of a person’s and the community’s assets that is the intellectual, physical, spiritual, social, natural, political, environmental capital-person, environment, emotional, spiritual, physical, financial. Paideia signifies general learning that should be the possession of all human beings, a complete pedagogical course of study necessary to produce a well-rounded fully educated citizen (Richard Tarnas, undated).

Fotopoulos (2005) distinguished between paideia as civic schooling and personal training:

- Paideia as civic schooling involves the development of citizens’ self-activity by using their very self-activity as a means of internalising the democratic institutions and the values consistent with them. The aim therefore is to create responsible individuals capable of interrogation, reflectiveness, and deliberation. This process should start from an early age through the creation of educational public spaces and the values implied by the fundamental principles of organisation of society: autonomy and community.
- Paideia as personal training involves the development of the capacity to learn rather than to teach particular things, so that individuals become autonomous, that is, capable

of self-reflective activity and deliberation. A step for learning, discovering and inventing and knowledge is conveyed through reflective activity.

Paideia as civic schooling and personal training is about the development of the planners (and citizens') self-activity, reflective activity and the capacity to learn and acquire knowledge in spaces guided by the fundamental values of planning. Paideia is critical for legitimising new dynamic and new planning frontier in the knowledge economy and spaces both in teaching, learning and practice.

Paideia is the process of educating the planner and the process of planning which in turns educates the planner. Paideia is an ideal embodied in the community (Castle, 1961).

Paideia signifies education in its totality, its wholeness and this encapsulates intellectual, moral and aesthetics. In essence paideia embraces the values of planning namely comfort, beauty, orderliness, equity, health, safety, security and participation. Paideia is an intellectual culture (Lucus, 1972)

Paideia Approach to Knowledge in Planning: ISOP Experience

Paideia approach to knowledge within the content and context of planning helps in reshaping the planning curriculum and produce new frontiers of planning knowledge in a holistic way that embraces the totality of whole person planning. The planning content, context, and process must reflect paideia and incorporate both practical civic engagement and authentic dialogue with the community. This section examines paideia with the content and context of Ibadan school of Planning.

Paideia, as its derivation (from the Greek pais, paidos, the nurturing of a child) suggests, has to do with the proper upbringing of a child. The term implies a holistic education that leads to physical, emotional, spiritual, *and* intellectual maturity over the course of a lifetime. The Paideia Program was introduced as an approach to American education in the early 1980s by Mortimer Adler and the "Paideia Group" in a ground breaking book entitled *The Paideia Proposal: an Educational Manifesto* (Adler 1982). Accordingly, it describes a philosophy of education based on a core curriculum with emphasis on equity combined with rigor. Paideia embodies an educational experience that prepares students to participate fully in a democratic society over the course of their entire lives.

By application the planning education that will affect the society at large must be deeply engaged in politicking within and ambit of citizen engagement and authentic community dialogue in the content, context and process of planning.

Paideia helps therefore in empowering the planners to focus and situate planning within the context of the environment in question of the person's assets (intellectual, physical spiritual, social, natural, political environmental and financial capital). Paideia upholds the notion that planning education should impact knowledge and empower the whole person in attempt to produce the new knowledge, skills and imaginaries that prepare practitioners to inform, influence and integrate new frontiers in planning. There could not be a better forum to discuss moving planning from pedagogy (methodology or planning content) to paideia (planning context, intellectual excellence and practice) than the ISOCARP Forum of Planning Education.

A. Planning content

ISOP Program

The Master of Urban and Regional Planning (MURP) program evolved from the then Master of Planning Science (MPS) program that was run by the Department of Geography, Faculty of the Social Sciences between 1974/75 and 1978/79 sessions (Sanni, 2013). The MPS course had to fold up due to non-recognition of the graduates of the program by the Nigerian Institute of Planners.

In 1981, the University of Ibadan master's program in urban and regional planning emerged as a response to the growing social consciousness and advances in methods of studying the various challenges posed by the environment. Domiciled at first in the Department of Geography, and later as an autonomous entity from the department of geography (Centre for Urban and Regional Planning), ISOP became a full-fledged department of urban and regional planning in March 2004. The program was renamed Master of Urban and Regional Planning (MURP) on advice of the NITP and it started anew in the 1982/83 academic session with 17 students. A new syllabus was formulated with the knowledge and input of the NITP education committee; a visiting professor was appointed and the course was resuscitated to train professional Urban and Regional Planners at the master's degree level.

Today, ISOP continues to distinguish itself in the design aspect as well as other areas such as environment, housing, transportation, indigenous knowledge, computer application and urban

management among others in its curricula. Urban and regional planning is eclectic in scope and this is why this ISOP program is broad-based and interdisciplinary.

ISOP started with one program in 1982, the MURP which was regarded as a terminal professional program while the MSc Housing program started in 2000/01 academic session. ISOP continues to evolve and reassess its programs and by 2013, ISOP has 5 programs namely:

1. Master of Urban and Regional Planning (MURP) professional
2. MSc. Urban and Regional Planning (Professional and academic)
3. MPhil in Urban and Regional Planning (Academic)
4. MPhil/PhD and PhD in Urban and Regional Planning (Academic)
5. MSC Housing (Professional)

ISOP vision is to be the most outstanding School of Urban and Regional Planning in Nigeria in terms of quality of training and research; and the goal is the pursuit of excellence (a paideia principle) in Urban and regional planning. These ideals are reflected in the planning content of ISOP. ISOP continually seeks to ensure that the quality and diversity of teachers, students and graduates meets globally acceptable standards. Gihring (1975) observed the University of Ibadan planning curriculum was rather unique being the only one influenced substantially by economic/regional geographers. The uniqueness or difference of ISOP from other planning schools is reflected in the content and context of planning curricula.

Ibadan Planning School is a graduate school running a two-year Master's programs in Urban and Regional Planning and Housing and accredited by the Nigerian Universities Commission and Town Planners Registration Council (TOPREC). It is recognized that while enough premium should be placed on the aspect of the practical learning process, a rigorous theoretical foundation is very desirable for both studio and field work. The application of computer to planning design and problem solving has been included in the curriculum to enable students to be at breast with contemporary developments in ICT. Core course components include: Planning theory and traditions, Planning methodology, Design and Planning practice, Internship, and Independent research project. Required courses: include broadly computer applications, land surveying, environmental engineering, while electives include: regional planning, housing,

transportation, urban management, environmental resource planning and management. These courses have been expanded to capture the market need. The courses are a balance between design, computer applications-theory-practice; the courses focus on the need of the National (Nigeria); Regional (West Africa/Africa) and Global (Asia/North America/Australia/South America) (though there are no specific courses on global contexts, global references and case studies are used in the teaching and learning process and the faculty is broad . The faculty also comprise of graduates from both national and international backgrounds and exposure. Experienced and planning experts particularly urban and regional planners in academia and practice constitute the faculty (teaching staff). They are complemented by existing expertise built-up over the years in other departments such as geography, economics and sociology.

It can be said with all certainty that the focus of planning education is in the right direction though more still needs be done in the area of policy, land use planning, infrastructure planning, enterprise planning (informal sector); extending the courses to include the African and Global context for example, Planning in different cultures; Globalization; focus on subject areas that are indicative and reflective of the Nigerian context for example informal sector, poverty ,energy, urbanization/urban studies. Land use planning is still critical and relevant to planning education monitoring and evaluation aspects of physical planning; communication course in planning.

Linkages

ISOP established a linkage program with the World Health Organization (WHO) and noted as the first to be designated as a Collaborating Centre for Research and Training in health and physical planning with all its rights and responsibilities in English speaking Africa. Notable among the work carried out by department was a research on food safety using the much less known and appreciated Hazard Analysis and critical control point (HACCP).

ISOP is also a member of the Association of African Planning Schools; and students from the program participated and won awards at the International Urban Design project in Porto Novo, Benin.

B. Planning Context

Globally there are about 550 universities offering urban planning degrees. UN-Habitat (2009: xxvi;193) indicates 342 universities are members of at least one or more of the planning school

association that are members of the Global Planning education Association Network (GPEAN) and about 60% (330 schools) of these are concentrated in 10 countries. The remaining 40% (220 schools) are located in 72 different countries. In total there is at least 13000 academic staff in planning schools worldwide. While developing countries contain more than 80% of the world’s population, they have less than half of the world’s planning schools”.

In Africa there are about 69 planning schools (table 1) and planning education in Africa is often closely tied to the educational systems of former British colonial powers on master planning tradition (UN-Habitat, 2009). While technical and physical planning education approaches dominated for many years, this has changed in recent decades with greater attention being paid to economic development, environmental planning, participatory and collaborative ideas (Orange 2008; Mabin and Todes 2008; Kussima 2008; Nnkya and Lupala 2008).

Table 1: Urban Planning Schools Inventory, University level, in Africa

Country	Number of Planning Schools
Algeria	1
Botswana	1
Egypt	3
Ghana	1
Kenya	3
Lesotho	1
Morocco	1
Mozambique	1
*Nigeria	39
Rwanda	1
South Africa	11
Tanzania	1
Togo	1

Tunisia	1
Uganda	1
Zambia	1
Zimbabwe	1
Total	69

Source: UN-Habitat, 2009:189

Ibadan School of Planning is located within the University of Ibadan main campus and usually referred to as the Department of Urban and Regional Planning (DURP). University of Ibadan is the premier university in Nigeria Ibadan established in 1948. Ibadan has a population of 2.8m in 2010 projected to reach 3.7m and 4.2 m in 2020 and 2025 respectively.

Planning Education in Nigeria dates back to 1961 when a sub-professional town planning programme was set up in the technical College, Ibadan, now The Polytechnic, Ibadan. The sub-professional programme was upgraded in 1974 to produce professional town planners which has since 1976 been turning out professionals (Obateru, 2010:105). The Polytechnic, Ibadan became one of two pioneering planning schools in Anglophone West African countries that were purposely set-up to train planners up to the intermediate professional level of RTPI of Great Britain (Falade, 2003:9). Egunjobi (2008) notes the heavy influence of British colonial government on planning in Nigeria. The 1946 Town and Country Planning Ordinance (modeled after British planning) which had become obsolete for the physical planning needs of the 20th century Nigeria came under review in 1988. A new urban and regional planning law was enacted by the Federal government in 1992 referred to as; the Nigerian Urban and Regional Planning decree no. 88 of 1992. The law is the subsisting statute governing physical planning administration in Nigeria.

The Nigerian Institute of Town Planners (NITP) was formed in 1966 with about 35 town planners in attendance while the Town Planners Registration Council (TOPREC) was established in 1988 by Decree no. 3. The council in collaboration with the Institute accredits physical planning schools in Nigeria, vets and approves the curriculum of urban and regional planning studies in Nigeria at all levels of education and training. TOPREC legalizes town planning as a

professional discipline of study in the country. There is also the Association of Town Planning Consultants in Nigeria (ATOPCON-practising planners).

Paideia: Intellectual Engagement and culture

The paideia principle of intellectual engagement and culture is demonstrated by Ibadan School of Planning (ISOP) involvement in the Sustainable Ibadan project, the University of Ibadan master plan, the University gateway project and the new ISOP building.

1. Sustainable Ibadan project: One of the ways by which university of Ibadan has been able to achieve paideia is through the collaboration with the UN-Habitat on the Sustainable Ibadan Project (SIP). SIP was established in 1994 (together with 11 similar projects across the world) by UN-HABITAT as part of the Sustainable Cities Programme and participants included ISOP academic staff. A City Consultative Forum was organized in 1995 and projects on waste management and conversion to organic fertilizers were top priorities for Ibadan and jointly identified aerobic composting technology using windrows as a viable method to collect and recycle waste, generate income, and use compost for urban agriculture were submitted. One of the pioneer community-based projects is the “Ayeye Waste Sorting Centre”. In collaboration with Urban Basic Services (sponsored by UNICEF), the project has been able to generate economic returns and employment for the local economy (Sridhar and Adeoye, 2003).

Problem identification and prioritization were carried out and the community members were trained in waste assessment and how to source separate biodegradable and non-biodegradable wastes. UNDP and UNICEF provided major funding, while the Oyo State Government and other stakeholders, including the University of Ibadan, provided other support through materials and human resources. The initiative was set up to develop practicable solutions to the solid waste problems by converting wastes to fertilizer. By improving environmental health and employment and generating income as well as food security, it also aimed to benefit the community (particularly women and children, who are the most involved in waste collection and disposal and thus the most vulnerable to its hazards). Improving sanitation and training community members on food security, health care and waste management issues were also part of the project.

The community members collected solid wastes from their homes and food waste from the Ayeye-Agbeni food market. Household wastes were sorted into major components (plastics, metal and glass) and then transferred to a sorting centre (where separate cubicles were provided for the segregated waste) at a location designated by the community. Biodegradable wastes were converted into organic fertilizer. A 5-t per day capacity plant was commissioned in November 2002. It was to produce 45-50 bags of 50 kg organic fertilizer per day to be sold to farmers within and outside the community. The project was executed in three phases (in 2001-2002), a quick appraisal survey; construction, mobilization and training; and community participation in the composting process, and field trials of compost utilization on identified farms. At the end the project was handed over to the community.

2. Master plan: ISOP was also privileged to prepare a Master plan for the University of Ibadan. The department was commissioned to review the 1982 plan and prepare a new and updated plan which will incorporate unused Ajibode (University of Ibadan landed property) as extension of the University. The plan was professionally prepared by robust team drawn from the students' core courses and assisted by the lecturers with some key professional from the allied professionals.

University of Ibadan master plan university master plan, the intellectual strength and diversity of ISOP students came to bear on the timely response and efficient handling of the project. ISOP admission requirements differ considerably from other planning institutions in Nigeria. While other planning schools emphasize urban and regional planning as a prerequisite to getting admission into graduate school, University of Ibadan continue to make the selection process to accommodate a wide range of students from other disciplines such as architecture, quantity surveying, estate management, economics, geography, sociology, civil engineering, building engineering, history, land survey, psychology and the like. This diversity of background helped in the master plan project.

When the university commissioned the department to undertake the second phase of the University of Ibadan, ISOP took advantage of the Advance studio design course, a second year compulsory course in the master's programme. The students constituted themselves into working groups (all were involved in the socioeconomic survey of the area and the conscientization of the people in order to avoid the fear that might have assail their mind of the people who were relocated by the university community at a time when the university was established.

3. Gateway design: The university also commissioned ISOP to prepare an alternative designs for the wall fence of the main gate and the design on the second gate.
4. ISOP new building: ISOP was also involved in the new Urban and Regional Planning building in Ajibode (University of Ibadan new campus)(see picture). This project evidently distinguished ISOP from other planning schools in Nigeria and catapulted ISOP into a new frontier in planning knowledge and practice.

What was done practically was to engage the students (figures 1-6) in the design of the building as we did for master plan. Students constituted themselves into professional groups. The civil engineers among them prepared the bill of quantity; the architects did the drawings and the supervision of the work. To ensure that the job was best and properly delivered, the architects further divided themselves into four groups and prepared the alternative plans out of which eventually the best option was chosen. Before the final choice, presentations were made on several occasions. After each presentation, interventions were made by the academic staff and correction was effected. The valuation and the costing were done by the quantity surveyors and estate surveyors respectively. All these were done by ISOP students and funding and necessary materials were provided by the university.

Figure 1: University of Ibadan Gateway



Figure 2: University of Ibadan Ajibode (New Campus) Master Plan



Figure 3: Department of Urban and Regional Planning



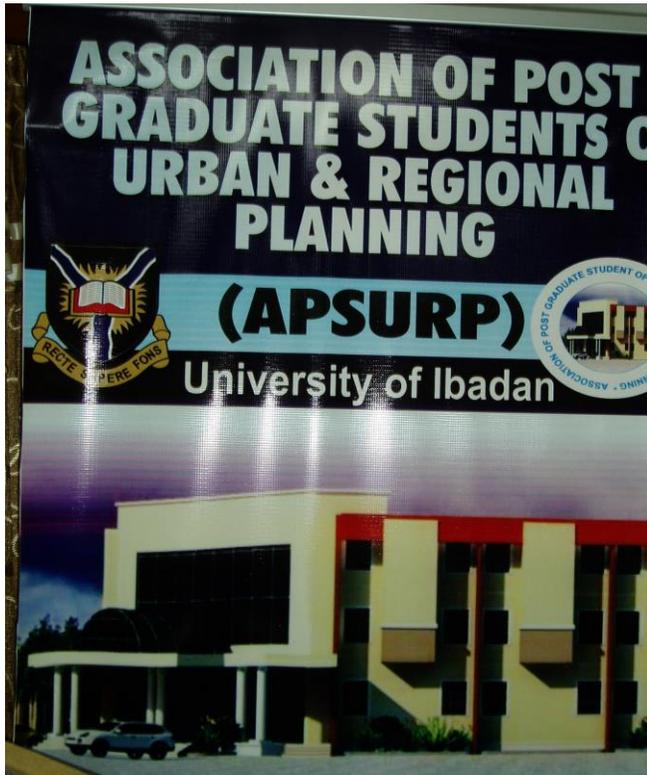
Figure 4: Students Model Example



Figure 5: New ISOP Building Planned and Designed by Students



Figure 6: Students Association



From Pedagogy to Paideia: The ‘Excellectual’ Learning Curve

Planning education continues to be relevant as Nigeria celebrates her 100th birthday in 2014. As a result planners must do due diligence to ensure educating the whole-person planning is reflected in the curricula. A curricula that embraces paideia-emphasises and develops-intellectual culture and rigor, and engagement with the broader community. The integration of paideia-wholeness, intellectual culture, rigor- in planning content and context by ISOP forges a creative way of teaching and learning that moves beyond pedagogy and embodies paideia. The academic pedagogical model was based on lectures rather than problem solving. Planners must develop an intellectual culture of knowledge-Paideia-that is evidenced based, embraces and emphasises wholeness or whole person planning, and promotes an intellectual culture that is informative, influential, integrative and innovative.

Planners require a new dynamic to respond to the changes brought about by what Rau (2012:16) characterized as the “urban speedometer”. It is no longer business as usual for planners. This new dynamic is paideia, a new frontier in planning education and practice. ISOP without any doubt has and continues to integrate the content of planning and the context of planning. ISOP combines the theoretical/methodological aspects of planning (pedagogy) with paideia (planning context, intellectual excellence and practice).

ISOP has developed an intellectual culture in the process of engaging the community, engaging the planner to confront the challenges encountered in the environment in which we live, work and play. Paideia is evidence-based and integrates multiplicity of knowledge (knowledge from various educational backgrounds) with experiential diversity.

In regards to the various projects ISOP program was involved six core components worked effectively to produce the intended effects and produce positive outcomes on the community and the program itself. There was commitment, collaboration, cooperation and communication on the part of the students, academic staff, the university and the community. Holistically, these four C’s were premised on authentic engagement, engaged acclimatization and interdisciplinary nature of the program.

Through engaged acclimatization, a paideia principle, ISOP program was able to map out conceptually and practically their intention, approach, and practice reflectively. “Engaged acclimatization is a synthesis of research ideas and practices that refers to a process of

embodied and reflexive knowledge production occurring through immersive encounters...”(Grimwood et al, 2012:214). Exploration, reflection, care, creativity and interaction characterize these encounters (Stevenson 2006). Engaged acclimatization can help researchers develop a relational perception and intuition that informs preliminary research objectives, design, and procedures; how research is actually carried out; and later stages of analysis, writing, reporting and future project identification (Caine et al, 2009).

Paideia approach to knowledge within the content and context of planning was demonstrated clearly in the ISOP various projects discussed above. The combination of methodology of planning (planning pedagogy) and practice was broadly articulated and integrated to inform planning and influence practice.

Paideia enhances the Intellectual capital of the planner through knowing, understanding and doing (KUD) and this helps to reshape the approach to teaching and learning in planning. With a vibrant students association, the Ibadan planning journal created in 2012 and partnership with the newly created Physical Planning unit of the University of Ibadan, the move beyond pedagogy to paideia by ISOP is evident.

Paideia as understood within the context of this paper therefore refers to intentional and authentic engagement within the intellectual culture that is reflective and translates into praxis. Intentional and authentic engagement is realised through commitment, communication and cooperation in an excellent and intellectual way (‘excollektual’).

By embracing the paideia physical planning education seeks to impart knowledge and empower the whole person planner in attempts to produce new knowledge, skills and imaginaries that prepare practitioners to inform, influence and integrate new frontiers in planning and respond to the hyper-dynamic age.

References

Abercrombie, N; Hill, S; and Turner, BS (2006) **Dictionary of Sociology**, Fifth edition, Penguin Reference, Penguin Books, England.

Adler, MJ (1982) **The Paideia Proposal: An Educational Manifesto**, New York: Macmillan Publishing.

Beauregard, RA (2003) Between Modernity and Postmodernity: The Ambiguous Position of US Planning, in Campbell, S and Fainstein, SS (eds.) **Readings in Planning Theory**, Blackwell Publishing Ltd: USA, pp.108-204.

Bernstein, B. B. (1977) **Class, Codes and Control**, vol. 3, 2nd edition, London, Routledge & Kegan Paul

Bromley, P (2011) Multiculturalism and Human Rights in Civic Education: The Case of British Colombia, Canada, **Educational Research**, 53(2), pp. 151-164.

Caine, KJ; Davison, CM; Stewart, EJ (2009) Preliminary Field-work: Methodological Reflections from Northern Canadian Research, **Qualitative Research**, 9 (4), pp.489-513.

Castle, EB (1961) **Ancient Education and Today**, Penguin.

Egunjobi, L (2008) Urban and Regional Planning Studies in the Nigerian Premier University: Reflections of a Pioneer Professor, Valedictory Lecture, Faculty of the Social Sciences, University of Ibadan, Ibadan, Nigeria, December, 2008.

Falade, JB (2003) **The Philosophy and standards of Planning Education in Nigeria**, Omega Hi-Tech Information and Planning Systems, Nigeria.

Freire, P. (1972), **Pedagogy of the Oppressed**, Harmondsworth, Penguin Books

Fotopoulous, T (2005) "From (Mis)-Education to Paideia" **The International Journal of Inclusive Democracy**, vol.2, no. 1.

Gihring, T (1975) Planning Education in Nigeria, The Planner.

Grimwood, BSR; Doubleday, NC; Ljubicic, GJ; Donaldson, SG; Blangy, S (2012) "Engaged Acclimatization: Towards Responsible Community-Based Participatory Research in Nunavut", **Canadian Researcher**, vol.56, no. 2, Summer, pp.211-230.

Kusiima, A (2008) A Review of Planning education at Makerere University, Uganda, Paper presented for the Workshop on the Revitalization of Planning Education in Africa, 13-15 October, Cape Town.

Lucus, CJ (1972) **Our Western Educational Heritage**, New York, Macmillan.

Mabin, A and Todes, A (2008) A Review of Planning education at the University of the Witwatersrand, Johannesburg, , paper prepared for the Workshop on the Revitalization of Planning Education in Africa, 13-15 October, Cape Town.

McClinchey, CB (2013) **Exploring Sociology**, Second Custom edition for Soc 101, Pearson: Canada.

Mumford, L (1961) **The City in History**, A Harvest Book Harcourt Inc. New York, USA.

Nnkya, TJ and Lupala, J (2008) A Review of Planning education at School of Urban and Regional Planning, Ardhi University , Dar es Salaam, paper prepared for the Workshop on the Revitalization of Planning Education in Africa, 13-15 October, Cape Town.

Obateru, OI (2010) **History of Town Planning: Focus on 18th Century to the present**, Penthouse Publications.

Osborne, K (2000) Public Schooling and citizenship Education in Canada, **Canada Ethnic Studies**, 32 (1), pp.8-37.

Oxford English Dictionary, Paideia, online draft version 2005.

Orange, M (2008) A Review of Planning Education at the University of Pretoria, Paper presented for the Workshop on the Revitalization of Planning Education in Africa, 13-15 October, Cape Town.

Rau, S (2012) "Rapid Urban Change Demands a Theory, Tools and a 'Fast Forward' Planning- An Essay", in Nan, S and Gossop, C (eds.) **Fast Forward: City Planning in a Hyper Dynamic Age**, **ISOCARP Review**, ISOCARP, The Netherlands, The Hague.

Sanni, L (2013) Welcome address and report to the accreditation/visitation team to the Department of Urban and Regional Planning, Faculty of the social Sciences, University of Ibadan, Ibadan, 30th January 2013, 7pp.

So, FS and Getzels, J (2009) "Planning environments: From the Practice of Local Government Planning (1988)", in Birch, EL (ed.) **The Urban and Regional Planning Reader**, Routledge Urban Reader Series,, Routledge: London and New York, pp. 238-241.

Sridhar, M. K. C. and G.O. Adeoye, 2003. Organo-mineral fertilizers from urban wastes: Developments in Nigeria, **The Nigerian Field**, 68: 91-111.

Stevenson, L (2006) Introduction, in Stern, P and Stevenson, L (eds.) **Critical Inuit Studies: An Anthology of Contemporary Arctic Ethnography**, Lincoln, NE: University of Nebraska Press, pp. 1-22.

UN-Habitat (2008) **The State of African Cities 2008: A Framework for addressing Urban Challenges in Africa**, UN-Habitat/ECA, Nairobi, Kenya.

UN-Habitat (2009) **Global Report on Human Settlements: Planning Sustainable Cities**, Earthscan, London.

Webster's New Encyclopedic Dictionary (2002) **Webster's New Encyclopedic Dictionary**, Merriam-Webster, Incorporated, Springfield, Massachusetts, USA.

Werner, J (1945) **Paideia: The Ideals of Greek Culture**, vols. I-III, translated by Gilbert Highet, Oxford University Press.

Planning for sustainable communities: Layout and design approaches

Sanmarie Schlebusch & Elizelle Juaneé Cilliers
North-West University, Unit for Environmental Sciences and Management, Urban and
Regional Planning, Potchefstroom, 2520, South Africa

1. Abstract

The composition and dynamics of the urban environment have become increasingly complex. The planning and development approach of a specific area and its adjacent areas should primarily promote specific lively elements that will effectively enhance liveability, sustain meaningful and continuous community development and subsequently attract and retain more people to that particular place. However, cultural diversity in regions, cities, towns and local communities has emphasised the need to reconsider and redesign, planning and design approaches that aim to harmonize the natural environment and resources of an area with the diverse needs and aspirations of the community.

Resourceful design approaches, strategies and policies employed in the planning of sustainable communities and the redevelopment of existing areas, will ultimately lead to well managed and protected, healthier, safer, greener, economic sustainable and liveable communities. Varied use of activities and facilities such as employment centres, residential neighbourhoods, natural areas, parks, local trails, schools, and public places can lead to a physical connection to create authentic neighbourhoods. Sustainable communities tend to have lower transportation costs, less traffic, are more economic in terms of housing and market demands, decreasing costs in terms of infrastructure, reduced air pollution and the ability to create a safer environment.

This research aims to explore and understand international and local integrated planning and design approaches currently utilised to guide the planning of sustainable communities. Reviewing different international and local layout and design approaches will aid to define and create improved planning approaches for sustainable communities. Place making and planning approaches should closely observe social and environmental complexities of modern society. Public participation therefor plays an essential role in determining the basic needs of the community and must be included as a fundamental building block in the planning process

2. Sustainable communities

Hart (2012) contends that “a sustainable community seeks to maintain and improve the economic, environmental and social characteristics of an area for its members can continue to lead healthy, productive, enjoyable lives”.

The concept sustainability explores the relation among economic development, quality of the environment and social equity.

Policies and strategies for sustainable development should simultaneously promote continuous economic opportunities, enhance environmental fundamentals and focus on the social well-being of the community to ensure an evenly balanced environment. Policies have to advocate impartiality between different generations, races and genders to ensure equal and uncomplicated access to available opportunities and facilities.

Quality of life is a main objective of sustainable development. The principle of planning for human wellbeing is thus of paramount importance and hinges significantly on immediate and visual changes to lifestyle.

The major features of sustainable community development include; ecological protection, density and urban design, infill village centres, local economy, sustainable transport, affordable housing, liveable community, sewage and storm water, water, energy and the three R's: construction waste recycling, environmental sound building materials, provision of in-housing recycling areas (Peck & Dauncey, 2002).

3. Planning for sustainable communities

A sustainable community underwrites objectives that reflect respect for both the natural environment and human nature. In this regard the use of appropriate technology is invaluable. A sustainable community should essentially strive to achieve the following characteristics and goals:

- Place a high value on quality of life. A sustainable community accepts that communities are first and foremost for people and that the primary objective of the planning and development process is to improve the quality of life of its residents, socially, economically, psychologically, and spiritually. It implements policies to achieve quality of life and does so in a fair, open, and democratic manner.
- Respect the natural environment. A sustainable community recognizes its relationship to nature and sees nature's systems and components as essential to its well-being. It provides access to nature through metropolitan parks, open-space zones, and urban gardens. It understands the sensitive interface between the natural and built environment, develops in a way that will support and complement-not interfere with--nature, and avoids ecological disasters.
- Infuse technology with purpose. A sustainable community uses appropriate technology, while ensuring that technology in the built environment is a means to an end, rather than an end unto itself. It emphasizes learning and understanding how existing and new technology can serve and improve communities, not vice versa. It sets clear and measurable goals for what it wants technology to achieve.
- Optimize key resources. A sustainable community takes an inventory of its human, natural, and economic resources and understands their finite quality. It ensures that forests are not overused, people are not underemployed, and the places of the built environment are not stagnant and empty. It reduces waste and reuses resources: it creates conditions in which all these resources can be used to their fullest and best potential, without harming or diminishing them.
- Maintain scale and capacity. A sustainable community recognizes the importance of scale and capacity, with regard to the natural and human environment. It ensures that the environment is not overdeveloped, overbuilt, overused, or overpopulated. It recognizes the signs of tension that indicate when the environment is overstressed and can adjust its demands on the environment, to avoid pollution, natural disaster, and social disintegration. (Geis & Kutzmark, 2006).

The planning and design of sustainable communities are essential. "Everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected for the benefit of present and future generations through reasonable legislative and other measures that prevent pollution and ecological degradation promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development" (United Nations (UN). 1997).

4. Layout and design approaches (Place making)

“You have to turn everything upside down to get it right side up” (Project for public spaces, 2011). This emphasises the bottom-up approach and community-scale of planning. Place-making was introduced in the planning sphere to address community-scale planning with the objective to create qualitative, liveable environments that adhere to the principles of sustainability. Figure 1 highlights and summarizes important elements of place-making.

The place-making-approach can be employed to realise liveability by implementing various functions within one space. This ensues in the transformation of areas from solely being places that people occupy, so called ordinary spaces, into liveable places. In order for this to realize, the main focus should be placed on current public spaces within communities that has potential, and the development of these spaces according to this place-making approach in order to create places in which people can socialize and interact (Cilliers *et al.*, 2012:11).

Hence, an ordinary space within a community is developed through the inclusion of lively elements, whereby a space is transformed into a place with good genius loci. In these lively public spaces that are now created, numerous functions and activities regarding community life will take place, and the people inhabiting this place will possess a feeling of ownership and connectedness according to Cilliers *et al.* (2012:11).

The idea is also to include more than one great place in a neighbourhood for a city or town (or in this case a rural community) to be regarded as a truly lively place (Cilliers *et al.*, 2012:12), thus integrating a variety of functions within one space, as illustrated by Figure 1.



Figure 1: Place making elements

Source: Baltimore City Department of Planning (2010:90)

4.1. *Current place-making theories and principles*

When citizens are effectively engaged in a design process then designers and planners can be their most effective too; facilitating a process that synthesizes local experience and wisdom with design principles and technical expertise. Designers can help people uncover their common interests and work towards practical, creative solutions that build on local character and assets. (McBride, A. 2013) Irrespective of the environmental attributes of an area, the community should be the primary source of information when planning and designing a specific place.

Participation can be seen as an approach to lively planning or as an element needed to create a lively place. The inclusion of the public in creating places is a difficult and complex process because of the diversity of the members it tries to accommodate: The more diverse the group, the more needs that need to be taken into consideration and therefore the more complex the participation process and input will be (Breman *et al*, 2008:17). Even though it is difficult to implement, participation still remains a critical part of planning for sustainable communities and public places and this participation of all residents along with supervision, reviews and awareness are important for effective place making (Loudier & Dubois, 2001:9). According to Cilliers *et al.* (2012:11), this qualitative participation approach is needed to address and successfully implement a bottom-up approach and ensure the planning of functional and usable spaces that can be regarded as lively. To create this type of situation where active participation is present, the community needs to play a bigger role in terms of discussions with authorities, policy formalization, creating solutions.

Equally important is that planning and design approaches should at all times endeavour to harmonize the needs of the community with the natural layout and resources of the environment to ensure an effective and sustainable design.

Continuous monitoring of the implementation and progress of the place-making and design process is imperative. Therefore transparent management and evaluation of the approach should be maintained to ensure that effectual amendments can be made timeously when deemed mandatory.

4.2. *The role of green spaces in place-making*

A community is often identified by the quality of their parks, gardens and open green spaces. This ultimately raises a sense of accomplishment and delight in the people of that community. Green spaces furthermore enhance the environmental appearance of a neighbourhood and contribute to the biodiversity of the eco-system. Table 1 describes the 3 key principles established by the Perth and Kinross Council to achieve the objectives and accomplish their vision of greens-paces.

Principle		Description
Provide for nature		<ul style="list-style-type: none"> • Environmental sustainability • Provide for a range of habitats for wildlife • Link habitats together
Provide for people		<ul style="list-style-type: none"> • Economic and social sustainability • Face the greenspace • Provide access to and within the greenspace • Encourage activity • Provide amenity and interest
Maintain		<ul style="list-style-type: none"> • Physical sustainability • Design and build to last • Good maintenance - funding of up keep is more important than capital • Involving the community and encourage use

Table 1: The 3 key principles of green-spaces

Source: Perth and Kinross Council, 2013

4.3. The status quo of South Africa

South Africa's policy of apartheid that prevailed between 1958 and 1994 has had an enormous impact on the existing layout and design in this country. Policy makers, Urban Designers and Regional Planners are presently confronted with fragmented, spatially segregated and detached urban and rural areas and communities. According to Asmal (cited by Donaldson, 1999) "The victory over the apartheid state in 1994 set policy makers in all spheres of public life the mammoth task of overhauling the social, political, economic and cultural institutions of South Africa to bring them in line with imperatives of a new democratic order."

What complicates the South African settlement patterns further is the difficulty in categorizing settlement types. Due to separate development and apartheid policies, a unique set of settlement categories developed, unlike the familiar urban and rural differentiation. The White Paper on Local Government 1998 (cited by Donaldson, 1999) lists 9 categories:

- Urban core
- Urban fringe
- Small towns
- Dense rural settlements
- "Betterment" settlements
- Informal settlements
- Villages
- Agri-Villages
- Dispersed and scattered settlement

Each of these categories is "complicated by variations in features such as land tenure systems" (Donaldson, 1999)

Sustainable development is undeniably part of the present-day and future layout and design approaches in South Africa. Since 1994, gigantic steps have been taken towards a more sustainable community planning approach. The Government continuously endeavors to devise policies and approaches that will promote sustainable livelihoods inside urban and

rural areas. It is therefore prudent, as for any government, to frequently compare relative policies and approaches thus assessing the efficiency of their own attempts.

The following table illustrates the South African and International approaches regarding primary aims and focusses, different programs implemented and the success with regards to livability.

	South African approach	International approach
Primary aims and focus	<ul style="list-style-type: none"> Improving opportunities and well-being of people in communities by implementing sustainable elements. Improving rural-urban linkages Eradication of poverty Job creation 	<ul style="list-style-type: none"> Mainly focused on creating lively places and reducing the number of people living in poverty.
Programs implemented	<ul style="list-style-type: none"> Integrated Sustainable Rural Development Strategy (ISRDS) <ul style="list-style-type: none"> Decentralisation and promotion of local power and autonomy in decision making Rural Development Framework (RDF) <ul style="list-style-type: none"> GEAR (<i>Growth Employment and Redistribution</i>) 	<ul style="list-style-type: none"> Sustainable Livelihoods Approach in White Paper on International Development Toronto's Creative City Planning Approach.
Success with regards to liveability	<ul style="list-style-type: none"> As mentioned, the RDF has a chapter based on sustainability and livelihoods. Therefore, if implemented accordingly, the policy can be regarded as successful. ISRDS focuses on providing opportunities for rural people. This is a core aspect of liveability (especially with regards to multiple opportunities and functions) and, as mentioned above, if the policy implemented 	<ul style="list-style-type: none"> The DFID used a top-down approach, therefore not primarily focussing on individual needs and participation. This is a core aspect of livelihood and therefore, in terms of liveability, cannot be regarded as successful. Toronto follows an approach based on participation and focussing on addressing and improving specific needs through liveliness. The success is based on the inclusion of the public and strong plans and policies with will and

	accordingly, it can have a successful livelihood influence.	determination.
--	---	----------------

Table 2: Summary of sustainable community development planning and design approaches internationally and locally.

Source: Own creation (2012)

However the composition and cultural diversity of the people of South Africa is complex and there remains much to do to amend and eradicate the unsustainable circumstances and elements in communities. Only a small portion of the population has a high quality of life and has access to quality services and infrastructure. The inequitable distribution of resources and wealth are the reality of our society and economy.

5. Conclusion of layout and design contribution to sustainable communities

The purpose of layout planning is to provide a framework within which numerous collective and individual investments may be accommodated over time, in a mutually reinforcing and development manor Behrens and Watson (1996:7-12). This implies that the layout plan should indicate a minimum set of spatial interventions rather than attempt to be more comprehensive. Behrens and Watson (1996:13)

Fundamentals that impact an effective layout plan are: land use management systems, the availability of land, the financial status and the accessibility of finances, level of implementation of policies and legislation and political determination.

Planning for sustainable development is directed by a combination of broad planning guidelines and normative planning concerns. General planning guidelines for urban planning include the movement network and transport, the open space system which is made up of the hard open spaces and the soft open spaces, public facilities, public utilities, land subdivision, cross-cutting issues such as: environmental design for safer communities, ecologically sound urban development and fire safety, economic services such as employment generation, urban markets, manufacturing infrastructure and urban engendering services (Guidelines for Human Settlement Planning and Design: 2000: National Department of Housing)

The normative planning concerns include place making, scale, access, opportunity and choice Behrens and Watson (1996:66)

A familiar planning approach for sustainable development is the linking of various planning guidelines and normative planning focusses.

PLANNING FOCUS

LAYOUT PLANNING PRINCIPLE

PLACE MAKING

- Focus on a hierarchical system of hard public places (for example squares, markets) and the main structuring element of urban areas, in order to establish loci for social interaction and community events and create places that shape enduring impressions of the settlement.
- Respond to the cultural context of a site by understanding traditional ways of making local cultural landscape (for

example patterns of planting, road alignments, locations of symbolic buildings or sacred buildings and spaces.) incorporating these into layout plans in order to ensure existing forms of the cultural landscape are mentioned.

- Respond to the cultural context of the site by identifying the implications of natural characteristics (For example topography, vegetation, climate etc.) for layout planning, in order to accentuate uniqueness, and bring the presence of natural landscape visually into settlement.
- Define hard open (for example, squares, road reserves) through the juxtaposition of public buildings, public furniture and tree-planting, in order to create outdoor 'rooms' which provide a sense of enclosure, greater safety through public surveillance, and protection from the natural elements.

SCALE

- Link soft open spaces (for example, public parks, playing fields, etc.) in order to form networks of recreational space that provide opportunities for the creation of continuous walkways and greater levels of urban biodiversity.

ACCESS

- Provide middle and lower order road networks with a continuous functional gradation of road types, in order to reconcile the needs of numerous road functions (for example, social, economic, aesthetic) and road users (pedestrians, street traders, motorists) and accommodate different modes and types of traffic movement (for example, through, stop-start, access seeking)
- Integrate the local road network with surrounding movement system and land use pattern, in order to improve levels of interconnection, extend important routes through the area, and provide opportunities for increased coverage and penetration of public transport operations.
- Prioritise pedestrian movement by providing direct, safe and convenient routes between different land use activities and public transport stops, in order to increase levels of intra-district access for the most vulnerable and very often poorest group of users.
- Design open and flexible middle and lower order road geometries which offer numerous possibilities through connections, in order to enable complex systems of movement to emerge (for example, the mix of through, local and pedestrian movement associated with vibrant 'activity streets') to facilitate unrestricted pedestrian movement, to provide public transport vehicles with direct and convoluted metropolitan movement patterns, land-use distribution and modal split.

OPPORTUNITY

- Expose the public facility system by locating the majority of facilities along main public transport routes, in order to make them as accessible as possible, enable complex patterns of use between different neighbourhoods, and create the

conditions necessary to encourage private commercial and industrial investments.

- Concentrate local through-movement onto continuous connecting 'activity' routes through the routing of public transport services and location of movement generators (for example, public facilities, modal interchanges etc.), in order to create the passing consumer thresholds necessary to support viable small end large-scale commercial activities.
- Provide hard public spaces as points of greatest access (for example, modal interchanges, intersections), in order to create the spatial conditions necessary for formal commercial investment and informal trading opportunities.
- Cluster collective service points around hard public spaces in order to create favourable small-scale manufacturing and trading conditions (by providing the necessary utility services and attracting potential consumers to specific points in space), and in cases where these services perform residential functions as well, enable a single trip to satisfy numerous household needs.

EFFIENCY

- Incorporate public markets (for example, agglomeration services and stalls) at points of greater access, as an element of essential public infrastructure, in order to assist small-scale manufacturers and traders by providing central trading locations and creating agglomerations of small traders capable of competing effectively with larger commercial establishments.
- Cluster public facilities according to their hierarchical and lateral functional relationships (for example, medical referrals, book circulation), in order to facilitate the sharing of resources (for example halls, playing fields, teaching equipment) between facilities, and enable a number of household needs to be satisfied in a single trip.
- Integrate public open space networks with high utility services like major storm water management systems (for example, retention and retarding ponds and solid waste disposal sites, in order to enable these spaces perform numerous functions, public open spaces acting as overflow facilities in the event of severe storms, and storm water storage facilities providing landscaping features.)
- Facilitate efficient service provision and land utilisation by optimising the layout for particular combination of service options provided (for example, avoiding steep or flat road gradients, reducing road length per erf) in order to enhance the affordability of the development through reductions in the unit cost of land acquisition and service provision.

Table 3: Summaries of overarching planning focusses and layout planning principles in South Africa.

Source: *Guidelines for Human Settlement Planning and Design, 2000 (cited by Bogopo, 2005:190-193).*

6. Conclusion

Albert Einstein said: "We shall require a substantially new manner of thinking if mankind is to survive"(Geis, & Kutzmark, 2006).

Resourceful design approaches, strategies and policies employed in the planning of sustainable communities and the redevelopment of existing areas, will ultimately lead to well managed and protected, healthier, safer, greener, economic sustainable and liveable communities. When planning and designing layouts for sustainable communities, a new and innovative way of thinking is desirable regarding interrelationships between economic, environmental and social well-being of the community. Quality of life is a main objective of sustainable development. The principle of planning for human wellbeing is thus of paramount importance and hinges significantly on immediate and visual changes to lifestyle.

More recent theories conversely depict that the objective location of people is not directly related to their subjective contentment. The latter can be manipulated by sustainable and lively initiatives that will enhance the quality of life irrespective of income, education, age or gender. Hence policies and strategies should not merely endeavour to eradicate poverty, create jobs or deliver houses, but embrace decisive sustainable and innovative initiatives that will effectively transform an area in a liveable and sustainable community.

Community participation and education will ensure the essential effective management of available resources to sustain this objective. Planning and design approaches should at all times endeavour to harmonize the needs of the community with the natural layout and resources of the environment to ensure an effective and sustainable design.

7. Acknowledgements

This research (or parts thereof) was made possible by the financial contribution of the NRF (National Research Foundation) South Africa. Any opinion, findings and conclusions or recommendations expresses in this material are those of the author(s) and therefore the NRF does not accept any liability in regard thereto.

8. Reference list

Baltimore City Department of Planning. 2010. Downtown open space plan, Baltimore, Maryland. Project for public spaces. Flannigan Consulting, Sabra Wang Associates. December 2010.

Bogopa, KSS. 2005. Managing sustainable development in the city of Tshwane.
<http://upetd.up.ac.za/thesis/submitted/etd-08192008-091132/restricted/04chapter4.pdf>.
Date of access: 4 March 2012.

Breman, B., Pleijte, M., Ouboter, S. & Buijs, A. 2008. Participatie in waterbeheer. Een vak apart. 109p. November 2008.

Brooks, SJ. & Harrison, PJ. 1998. Slice of modernity: planning for the country and city in Britain and Natal, 1900-1950, SA Geog Jnl 80(2): 93-100 1998,93)

Cilliers, E.J., Timmermans, W., van den Goorbergh, F. & Slijkhuis, J.S.A. 2012. The Lively Cities (LICI) background document: LICI theory and planning approaches. Part of

the LICI project (Lively Cities, made possible by INTERREG IVB North West Europe, European Regional Development Fund, European Territorial Cooperation, 2007-2013. Wageningen University of Applied Sciences, Van Hall Larenstein).

Donaldson, R. 1999. Urban restructuring through land development objectives in Pietersburg: an assessment, *Journal of Public Administration* 35(1): 22-39.

Geis, D. & Kutzmark, T. 2006. Developing Sustainable Communities: The Future is Now. <http://freshstart.ncat.org/articles/future.htm>. Date of access: 24 April 2013.

Hart, M. 2012. Action Planning and the sustainable Community. <http://www.epa.gov/greenkit/sustain.htm>-Sustainable Community | Green Communities | US EPA. Date of access: 30 July 2013.

Loudier, C. & Dubois, J.L. 2001. Public spaces: Between insecurity and hospitality. http://www.ocs.polito.it/biblioteca/verde/uk_PARTIE201_C133.134.pdf Date of access: 12 Aug. 2012.

McBride, A. 2013. Community Wisdom + Expert Knowledge = Good Community Design. <http://www.pps.org/blog/community-wisdom-expert-knowledge-good-community-design/>, Date of access: 11 June 2013.

Peck, S. & Dauncey, G. 2002. 12 Features of Sustainable Community Development: Social, Economic and Environmental Benefits and Two Case Studies. <http://www.cardinalgroupp.ca/nua/ip/ip01.htm>-12 Features of Sustainable Community Development. Date of Access: 12 April 2013.

Perth & Kinross Council. 2013. Vision for greenspaces. <http://www.pkc.gov.uk/article/3444/Vision-for-greenspaces>. Date of access: 5 May 2013.

Project for public spaces. 2011. The Atlantic Interviews Fred Kent <http://www.pps.org/blog/the-atlantic-interviews-fred-kent/>. Date of access 5 March 2013.

United Nations (UN). 1997. ECONOMIC ASPECTS OF SUSTAINABLE DEVELOPMENT IN SOUTH AFRICA. <http://www.un.org/esa/agenda21/natinfo/countr/safrica/eco.htm>. Date of access: 14 January 2013.

US Environmental Protection Agency. 2012. Action Planning and the Sustainable Community. <http://www.epa.gov/greenkit/sustain.htm>. Date of access: 13 March 2013.

Joint ISOCARP - Planning Institute of Australia (PIA) Day

49th ISOCARP Congress Proceedings

Adaptive Mechanism of Collaborative Planning for City-region's Large-scale Compound Disasters in Taiwan

Kuang-Hui PENG, National Taipei University of Technology, Taiwan
Yao-Chi KUO, National Taipei University of Technology, Taiwan
Mei-Yin KUAN, National Taipei University of Technology, Taiwan

Taiwan is one of the most vulnerable countries in the world. The paper aims for coping with large-scale compound disasters mainly caused by climate change in which a disaster adaptive mechanism to be taken, and how to use cross-border cooperation in city-region to initiate adaptive mechanism in Taiwan by reviewing the past experiences. Through a literature review, the paper expects to provide adaptive model for spatial planning and disaster prevention planning so as to reduce the impact of large-scale compound disasters and to protect people's lives and properties of city-region in Taiwan. We first redefine the concept of cross-border cooperation and governance. Then we review the present cross-border cooperative strategies to figure out the issues we are facing. Finally, we suggest that at different levels of government should build up an adaptive mechanism of network-integration of cross-border cooperation by a triple-layer cooperative framework in both vertical and horizontal aspects to help the central and local governments to work together effectively as a response to city-region's large-scale compound disaster.

Keywords: adaptive mechanism, cross-border collaborative planning, city-region, large-scale compound disaster

1. Introduction

Climate change is a comprehensive change in the worldwide scale, disaster caused by climate change is now spreading into various fields and issues, crossing the geographical border of cities, regions and countries. They are now being connected with cross-regional and international compound disasters and becoming an interactive issue. The cross-border issue might not be responded and handled by the conventional administrative structures and strategies. Thus, an interactive thinking crossing the present administrative structure and government hierarchy is essential to cope with this unprecedented event.

Frequent typhoon, earthquake and intensive rainfall in Taiwan make it vulnerable when facing heavy disaster particularly caused by the global climate change. Large scale compound disaster like the 921 Earthquake in 1999 and the Marokot Flood in 2009 are the significant evidences of that. Since natural disasters might not be restricted by administrative boundaries that single local authority might not be able to deal with all disaster mitigation, rescuing and recovery so that cooperation between cities is though unavoidable.

The research aims to break through the conventional limit on cross-border cooperation that highly focused on social and economic aspects and toward disaster governance. Besides, an epochal adjustment on administrative boundary have just done in Taiwan that cross-border cooperation thinking might be noticeable at this time. How city-region formed in Taiwan will be helpful in the future? How should they cooperate to deal with emergency? How to build up their partnership? All the issues are worth to be discussed while facing global climate change accompanied with compound disasters. Thus, the study tries to build up an adaptive framework of collaborative planning as cross-border cooperation for disaster mitigation that will hopefully be helpful for Taiwan.

The research first discusses about the concept of cross-border cooperation through literature review and focus on the definition, formation of it. We try to make clear of the concept of cross-border, city-region and disaster governance to realize how the concept "adaptive mechanism of collaborative planning" is applied within the spatial planning. Second,

we focus on comparing cases to figure out the condition of cross-border cooperation strategies for disaster mitigation. We choose the 921 Earthquake and the Marokot Flood of Taiwan and the 311 Tōhoku Earthquake and Tsunami of Japan to analyze the experience and institutional difference among these cases for inspiring future strategies. The research also held an expert focus group to discuss about the issues and strategies of compound disasters in Taiwan to figure out meaningful inspirations. In the final, we propose cross-border cooperation strategies for disaster mitigation with a long term perspectives.

2. Literature Review

2.1 Cross-border Cooperation

OECD (2001) indicates that the governments at different levels are trying to build up a mechanism for public, private, and volunteer sectors to work together as partnership to improve effectiveness, this might be regarded as a global trend. Cross-border cooperation existed in different levels and spatial boundaries so that factors affecting it might be complex and various including professions, political thinking and executor (Sullivan and Skelcber, 2002). Cross-border cooperation emphasizes the character crossing regions, levels and essentials, so this research defines cross-border as a partnership consists across central and local governments, public and private sectors and professional fields. Not only geographic boundary could be crossed, administrative level and department also. This makes actor and department from different level and different place working together to share their resource and functions to resolve their mutual problems.

2.2 City-region

It's a geographic region that contains both urban and adjacent regions that far from a single city and putting an emphasis on the interaction between them. Unlike the conventional way separating cities by administrative boundary, city region focus on "region" instead, meaning that several cities coordinate across boundaries and levels for their mutual interest, it also helps cities embraced in the region to co-exist in peace (Tewdwr-Jones and McNeill, 2000; Keating, 2001; Robson et al, 2006; Welsh Government, 2012; Lin and Li, 2005; Yeh and Wu, 2006; Chen, 2007). The importance of city-region is not only about its operation and management of each government in it but breaking through the constraint of rigid administrative boundary and bureaucrat and emphasizing the territorial governance. This allows bureaucrat from different cities to work together in both vertical and horizontal way. Characters of city-region contain operation in multi-layer of space; emphasizing the efficient use of resource, social inclusion and creativity.

2.3 Large-scale Compound Disaster

The starting point for reducing disaster risk and for promoting a culture of disaster resilience lies in the knowledge of the hazards and the physical, social, economic and environmental vulnerabilities to disasters that most societies face, and of the ways in which natural hazards and urban vulnerabilities are changing in the short and long term, followed by action taken on the basis of knowledge (UN, 2005). We define the large-scale compound disaster is directly or indirectly causing more and other disasters. Disaster events frequently occur more than two in the area with the characteristics of temporality, spatiality, contagion, cumulative, and complexity, which are simultaneously or consecutively happen and related to cross-border cooperation. Taiwan is one of the most vulnerable areas in the world cannot use only one way thinking of disaster impact. We have to prepare for any contingency and set up adaptive mechanism for restoration and recovery.

2.3 Adaptive Mechanism of Collaborative Planning

Adaptive mechanism of collaborative planning is a bottom-up interaction in which the target and consensus are confirmed with each other through cooperation, coordination as a partnership. It refers to disaster governance including pre-disaster preparedness, prevention, mitigation and post-disaster response measures, which focus on building up a systemic

policy framework that operated under a cooperative model of cross-field, cross-administration, cross-sector, cross-region, cross-organization and cross-level involving public and private sectors, NGO and NPO to set up disaster-mitigation partnership to resolve disaster issues together.

3. Case study

3.1 Spatial Planning Cooperative Model in Taiwan

The spatial planning strategies have been proposed in the "Strategic Plan for National Spatial Development" approved by the Executive Yuan in Taiwan in 2010, which emphasized cross-administrative-border cooperative model and develop toward three city-region's areas, seven development regions and six special municipalities directly under the jurisdiction of the central government (including so-called 5 capitals and 1 preparing to be special municipality) as Figure 1 (Lee, 2012). The cooperative planning strategies for each city-region, development region and special municipality depend on the issue and function of the region has. The central government encourages individual administrative unit to resolve cross-border issues by setting up collaborative planning mechanism, which is based on the nature of issues and functions with neighboring local governments for cross-border cooperation.

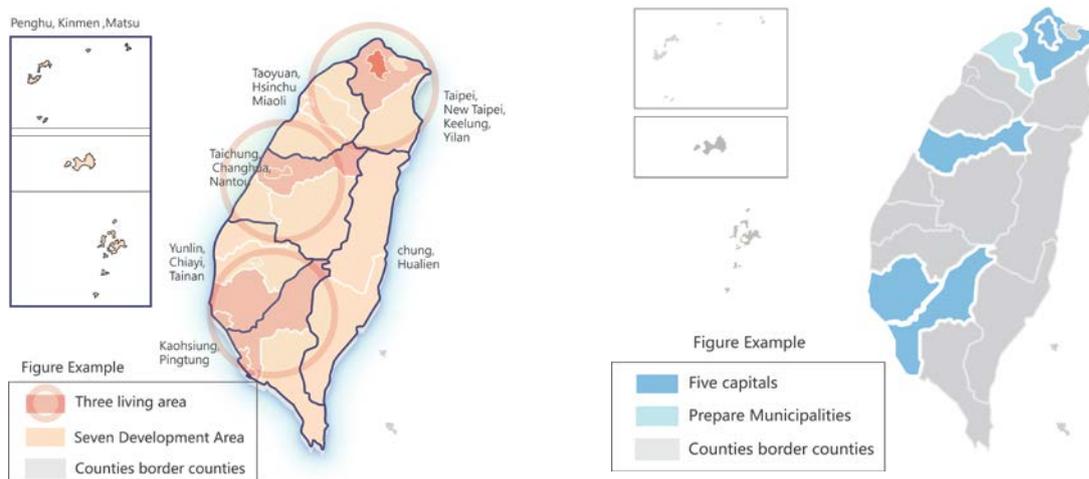


Figure1. Spatial Planning Cooperative Model in Taiwan

Lai and Pai (2011) indicate that after checking the disaster governance and planning strategies in Taiwan, disaster governance is quite disintegrated and isolated between each other, and local general development plan is not legalized which makes local governments with difficulties to implement adaptive strategy to climate change in a way of cross-border cooperation smoothly. However, the cross-border cooperation model could be categorized into several patterns by some of previous experience, which including adjacent-bilateral, adjacent-multi, remote-bilateral and remote-multi cooperation models. The adjacent-bilateral cooperation is the most popular model now, e.g. Tamsui River Basin Governance Committee was established to deal with the Tamsui River basin where covers jurisdictions of Taipei and New Taipei cities. Northern Taiwan Development Committee could be a case of adjacent-multi cooperation including several local authorities as shown on the right of Figure 2. Lin (2012) mentioned that Taipei city supports Kinmen County for building water supply plant and Kaohsiung City supports Penghu County for building incineration as indicated on the left of Figure 2, which could be regarded as a remote-bilateral cooperation model. The remote-multi cooperation model could be seen in the case of post-disaster reconstruction, e.g. municipalities and NGOs from anywhere gathered and cooperated to support restoration and recovery.

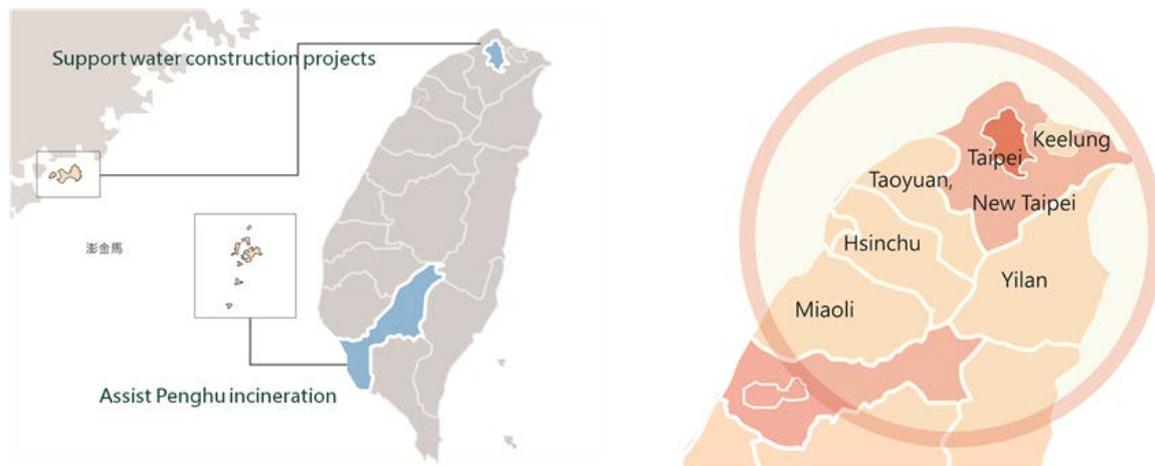


Figure 2. Cross-border Cooperation Model Categorized by Geographic Relations

3.2 Cross-border Cooperation Cases

3.2.1 The 921 Earthquake

The 921 Earthquake was measuring a 7.3 on the Richter scale earthquake which occurred on September 21, 1999 in Nantou County, Taiwan. The earthquake and its aftershocks killed 2,455 people and caused about NT\$360 billion (US\$11.25 billion) in a total economic loss, it was the second-deadliest earthquake in Taiwan's recorded history. Over 11,305 people got injured and 50,652 houses completely destroyed, and 53,615 half-crumbled; and 102 bridges and 37 highways destroyed across the affected areas, central Taiwan got most badly shocked and it was the most horrible disaster after World War II in Taiwan (Peng and Kuo, 2008).

During the post-921 Earthquake period, several policy issue could be pointed out due to the insufficient responsive strategy, including command system was in panic as a reason of unclear division of labor between central and local government; emergency warning system broke down after the earthquake works unsuccessfully; unfair resource distribution. Also, Yang (2009a) tends to attribute all these problems to a lack of rescue experience and unavailable information about disaster area. Hsiao (2011) takes the post-921 recovery as an example, indicates that the power released from the central government made room for the local government and grassroots citizen group get empowered and cooperate well, like up with external NGOs and central government and so carry out the recovery successfully.

A temporary organization was formed after the 921 Earthquake as a result of absence of planning and a clear framework for responsive rescue strategy. Information could not be well transmitted as a result of disconnection between different departments coping with disaster affairs and were not well trained. A more proper rescue and recovery works were not implemented until the arrival of foreign rescue groups.

3.2.2 The Marokot Flood

It's also called the 88 Flood, caused by Typhoon Maorakot during 6th-10th Aug. 2009, giving rise to severe mudslide in several places in the central and southern Taiwan. The entire village, Xiaolin in the rural township of Jiaxian, Kaohsiung County was nearly razed to the ground by the mudslide and only one building still stood and is regarded as the most severe cases in the Maorakot Flood. In this case, emergency measure enforced by the government are not quite appropriate, the problems including real situation and scale of disaster were not clearly seized; principle for evacuation and refuge were not explicit enough; the damage was underestimated that the capacity of refuge was totally insufficient; lack of official direction and planning that the situation of distributing material was in a mess (Yang, 2009b; Control Yuan, 2010; Lee & Yeh, 2010).

However, the civil cooperative relation has developed from the post-921 experience since then and showed good interaction and cross-border cooperation. Feng & Huang (2010) indicate that the civil NPO established “Marokot Flood Service Network” right after the disaster and got involved in the rescue and recovery affairs, acted as a platform of coordinating civil sector and government. Chen (2011) also points out that for the purpose of reinforcing the reconstruction and rescue ability, several measures were carried out after the Marokot Flood including:

- (1) Legalizing the division of labor for each department under the cross-border cooperation framework;
- (2) Providing disaster area service and reconstruction work through cross-border cooperation, government, NGO and enterprise are included;
- (3) Integrating the reconstruction work under the base of special ordinance, building up the reconstruction committee to provide special budget and conduct these affairs.

3.2.3 The 2011 Tōhoku Earthquake and Tsunami

The 2011 Tōhoku Earthquake and Tsunami occurred March 11, 2011 in Japan, was recorded magnitude 9.03 (Mw) with the epicentre approximately 70 km east of the Oshika Peninsula of Tōhoku and the hypocenter at an underwater depth of approximately 30 km. Damage caused by it was far more greater than Great Hanshin earthquake, 1995. Prefecture including Miyagi, Iwate and Fukushima was shocked mainly and the damaged area across 36,000m². Building crushed in the 2011 Tōhoku Earthquake was approximately five times, and seven time the amount of death, sixty times the amount of missing than in the 921 Earthquake (Ke, 2012).

Japanese government built up emergency operations center 4mins later right after the earthquake, missions given to this center including calming the nationals down; collecting information about disaster; sending the army to disaster area; confirming the route of human resource and goods distribution. Regarding the goods distribution, the damage caused by the earthquake in each district was estimated respectively first, the command and order for goods and material then passed to each group, enterprise and asking for support after the estimated situation was reported to the center. However, since those goods and material were sent to the center first so it wasted time and caused delay on transportation. It did not become smooth until professional logistics concept was taken into the system with the help of private logistic company (NCDR, 2011); Civil sector also mobilized over 30 thousand, various kinds of volunteer for providing medical and reconstruction service, a national network was formed by more than 140 private groups to stretch their service into remote area. Telecommunication companies and convenient stores provide free wireless service and food to support the basic need of refugee (Tang, 2010).

NCDR(2011) points out that several measures that carried out within the 2011 Tōhoku Earthquake and Tsunami are quite impressive and worth to learn including early warning system in emergency save time for evacuation; completely built up tsunami warning system works perfectly; nationwide disaster prevention drills; good distribution in disaster area through professional logistics system; real time monitoring camera system; establishment of platform for public participation; emergency placement with cross-border cooperation; clear convention about reporting disaster news for media.

4. Cross-border Cooperative Strategies

To realize the technical method dealing with the disaster in the real world, an expert focus group discussion was held on 10th Dec. 2012. Experts from government, academic and enterprise who has had involved in disaster mitigation, prevention, rescue and recovery affairs were invited. After this discussion, we concluded some viewpoints and meaningful inspiration. The group discussion mainly focuses on issues existed in disaster governance process and could be listed as: first, the interior and foreign experience and suggestion on disaster governance and cross-border cooperation; second, review the issues about cross-border cooperative strategy for disaster governance; third, establishment of public and

private partnership; fourth, crucial factors affecting disaster rescue; fifth, strategy and planning for disaster governance in the future.

4.1 Necessity of Cross-border Disaster Governance

We have gone through the painful experience of the 921 Earthquake and the Marokot Flood or even the 2011 Tohoku Earthquake that a perfect and effective mechanism of disaster governance is proved essential. Consider the characteristic of disaster that occurs crossing administrative border, as an adaptation strategy for compounded disaster, the labor of division under the present administrative system and administrative border must be reviewed and revised. A cross-regional or even cross-borderland institution for disaster governance might be essential.

The necessity of disaster governance strategies was proposed by the expert focus group. They are: facing with the hazard of large-scale compound disaster, we can derive a reasonable assumption under the scale-economy theory that the risk might be much lower as many as the partners are involved, the cost either. The benefit will get much bigger as a consequence that various partners with various abilities may cover each other and form a strong network with high responsive ability as Figure 3. Since that cross-border cooperation is a long-term issue with high complexity and difficulty and condition of science technology, society, economy etc. Change rapidly in the real world that the model for cross-border cooperation we had defined will also changes according to the conditions, however, we could not deny the necessity and should be aware of how cross-border cooperation can help refugee and resource distribution and information flow when facing emergency.

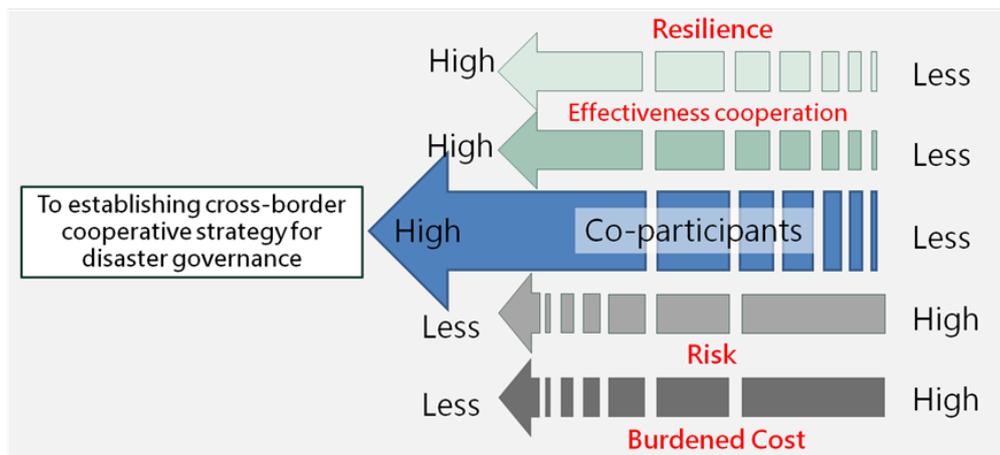


Figure3. Necessity of Establishing Cross-border Cooperative Strategy for Disaster Governance

4.2 Cross-Border Cooperative Strategy

- (1) Administrative integration: An integrative platform is essential. However, the division of labor is not clear enough for departments to cooperate with each other, an interior integration is needed. As a matter of fact, cooperation between departments under the present framework is quite weak and lack of connection. Staffs that are not well-trained and activated could also be the barrier of interior and cross-department integration. In short, the followings are essential strategies: ① an interior integration; ② a cross department integrated platform; ③ professional training program form personnel; ④ interchange and interaction of personnel between departments.
- (2) Cooperation crossing sector and geographic space: Public sector has much more abundant resource than private sector be also highly constrained by legal regulation. Private sector gets more flexibility and vitality that they could activate the disaster governance network if got involved with the cross-border cooperation. Public sector itself should also reconsider the present condition of division of labor between central and local. Regarding the public construction and resource management or also public

service could all be provided through cross-border cooperation. That is to say that the public sector should act as a coordinator to provide way for different actors to work together and take responsibility jointly, exploring their partnership network from local through central, across the border and boundary, get all public, private and academic sector in to share their resource and function together.

- (3) Planning cross-border cooperative strategy according to the local condition: Couple of issues should be dealing with before enforcing cross-border cooperative strategy, for example, as emphasized before that the issue that exists under the present framework of three metropolitans is definitely different from the offshore islands. The structure of organization and strategy should thus be different according to local condition. The concept cross-border cooperation could also be extended into cross-marine, cross-national boundary etc. Consider the specificity of offshore island such like Kinmen or Penghu, the best partner for them to build up cross-border cooperative relation might be cities geographically adjacent in mainland China. The achievement of encouraging the interaction between them and pursuing support from main city like Taipei or Kaohsiung to offshore islands might be expectable.
- (4) Emergency route and critical infrastructure: Facing large-scale compound disaster, issues including the refugee planning and emergency infrastructure to provide lifeline service, how neighbor area provide help to disaster area might be important. Government should plan a refugee ring to provide the above needs according to the character of each area and fundamental database of national land use and disaster. What's more, contract for providing emergency good and delivery to disaster area should also be concerned in advance with cross-border cooperative thinking.
- (5) Education and training to improve disaster awareness: Gap in the awareness and understanding about disaster exists between citizen and government. Explanation meetings are frequently held but not really work. It's important to connect the real life with disaster training to make people possible to realize the present issue and condition regarding disaster governance and prevention. Community-based or township-based level disaster training program could be explored into national scale and combined with mega event.
- (6) Cross-border cooperation promoted with community participation: Since community is the basic unit of society and thus plays an important role on disaster prevention. Hasemi (2012) considers that disaster governance consists of self-help, mutual-help and co-help refers to people help themselves, people help with each other in community and relief service provided by public sector as Figure 4. The concept "community of disaster governance" must be promoted with the assistance of technology to empower the power of community itself.

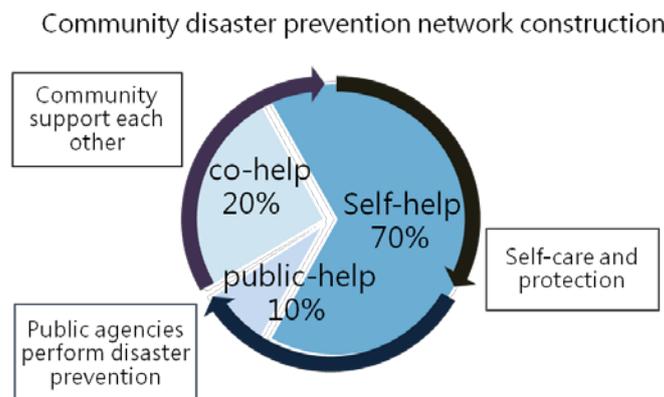


Figure4. Community Network for Cross-border Cooperative Disaster Governance

Resource: Hasemi (2012).

Besides, it's important to consider how to get people involved. However, in the case of demand on refugee, urban area is much bigger and the space is relatively confined. Due to these condition that the cross-border cooperation combined with community

participation must be taken much seriously. As some concrete strategies, we might combine disaster prevention training with festival in urban area to improve the participation rate.

- (7) Post disaster planning and governance in cross-border cooperation: In the case of large-scale disaster, government must first consider the cross-regional refugee and sheltering, second, source of goods and goods distribution planning, logistics planning are also important as well. However, issues come out during the post-disaster period might be much tougher such from refuse disposal and waste discharge to social coordination of reconstruction and recovery. All these issues must be considered under the cross-border cooperative thinking generally in advance so that the responsive strategy could be carried out instantly.
- (8) Integration and popularization of disaster information: Information about disaster prevention released from government could not be effectively used by people is now a crucial issue. For example, disaster map and disaster prevention planning map is unreadable for normal people that they couldn't take refugee smoothly in emergency. Enforcing the popularization of disaster information is very important. Strategies includes getting people well trained with disaster emergency survival skill and familiar with their community environment and realize the emergency information rapidly. Besides, government should unify and integrate disaster index system and sign system to make it easier to realize.

4.3 Integrated Network of Cross-border Cooperation

Confront with the hazard of large-scale compound disaster, it's essential to respond with cross-border cooperation method and build up a both vertical and horizontal integrated disaster governance network:

- (1) First layer of horizontal cross-border cooperation: Departments including water resource, construction, social affairs, fire, police in the local government should build up a fundamental network to cope with the disaster governance affairs in local level (shown as the thick solid line in Figure 5).
- (2) Second layer of horizontal cross-border cooperation: The very fundamental first layer of horizontal network in local level, namely each local government should cooperate and work together to form a second layer of cross-border cooperation network (shown as the dotted thick line in Fig.5). The network could be formed under the consideration of their character and resource exchange rather than their geographic relations. It's a layer greater than the local level but subordinate to the central level with vital interaction.
- (3) Third layer of cross-border cooperation: Besides the first and second layers of horizontal integrated network stated above, a third layer of vertical integrated network is also essential which connects the central network with the first and second layer vertically. Since departments in the local government are subordinate to department in the central that them must communicate and cooperate with each other more effectively by this kind of vertical integration. However, some departments in the central have no one directly under them in the local such as the Central Weather Bureau, since that these kind of departments have higher independency and profession that they could consider interact with local through the way like temporary personnel exchange program or co-training program to build up an effective platform for dealing disaster affairs.

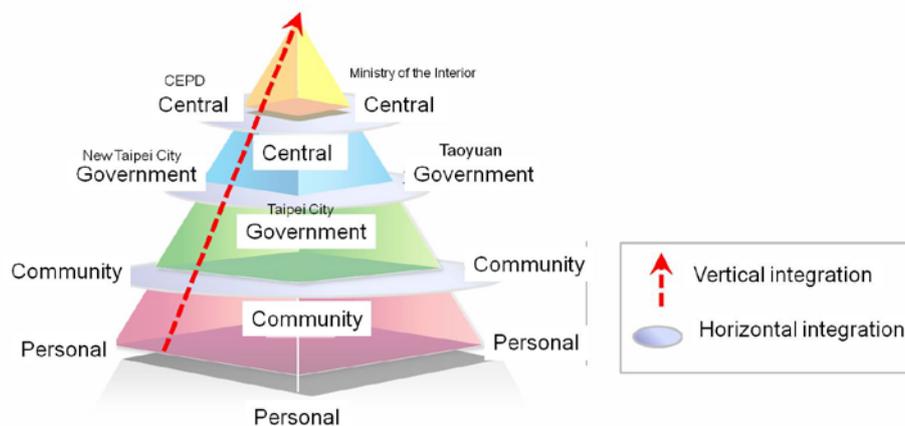


Figure5. Vertical and Horizontal Integrated Network for Cross-border Cooperation

5. Conclusion

Since Taiwan has quite vulnerable geographic condition that the responsibility of disaster governance and mitigation are quite heavy for the government to burden alone. Thus, building up the partnership with private sector might be one of the best ways to resolve this issue. Drafting all possible strategies together under the cross-border cooperation framework is important to cope with the climate change and global warming issue.

Regarding disaster governance strategies, cross-border cooperation must be more positive and active to change the conventional thinking of cooperation between adjacent cities and areas. Pre-disaster governance strategy is as important as post-disaster governance strategy, preventing and mitigating disaster could be much helpful than taking afterward rescuing and adapting. Local government and community might be a crucial role on establishing the disaster governance partnership, however, appropriate training and pipe for communication is essential and will be possible to make the defects of present administrative and institutional system. However, the central must also respect the independency and autonomy of the local regarding cross-border cooperation affairs. Local should also make good use of this chance to get integrated with each other to acquire and share more resource and chance together to empower themselves to handle hazardous compound disaster.

Acknowledgements

The authors are grateful for the funding of research project from the National Science Council of Taiwan (NSC 101-2410-H-027-015-MY2)

References:

- Chen, H.H. (2007) "Urban Competition & Regional Governance: An Exploration of Cross-Strait Cases", *Journal of State and Society* 3(1):1-33. (in Chinese)
- Chen, Z.C. (2011) How to respond to natural disasters, from the Huge Typhoon Morakot Reconstruction Experiences. Centennial special issue of workers Kaohsiung journal 18(4):97-100. (in Chinese)
- Feng, Y. & Huang, Q.Y. (2010), Taiwan's Disaster Response Platform Model Nonprofit Development - From September's Massive Earthquake to Typhoon Morakot, *Community Development Quarterly* 131: 315-325. (in Chinese)
- Hasemi Yuji (2012). Great East Japan Earthquake Investigation Report - Towards Disaster high society, 9th public the International Forum: Architectural Society of Taiwan (AIUE2012). (in Chinese)

- Hsiao, H.W. (2011), Who Leads the Recovery? -A Study on the Inter-Organizational Relations among Post-921 Earthquake Community Empowerment, Tokyo, Japan: University of Tokyo (APSA 2011).
- Ke, X.X. (2012), Great East Japan Earthquake Disaster Recalls the Great East Japan Earthquake Reconstruction Survey will be Published. National Disaster Prevention and Protection Technology Centre. (in Chinese)
- Keating, M. (2001), Governing Cities and Regions: Territorial Restructuring in a Global Age. In A. I. Scott. (Eds): Global City-Regions. 371-390. Oxford: Oxford University Press.
- Lai, B.S. & Pai, J.T. (2011), Taiwan's Five Major Metropolitan Areas of Taiwan Vulnerability Assessment of Flood Disasters Comparison Study, International Conference 2011 on Spatial Planning and Sustainable Development, national Community on Spatial Planning and Sustainable Development. (in Chinese)
- Lee, C.Y. (2012), Regional Governance: To Promote Cross-Border Cooperation Mechanisms, Conference on Review and Vision for 2th Anniversary of Reforming Municipality from City /County, Department of Civil Affairs 37-54. (in Chinese)
- Lee, W. S. & Yeh, K.K. (2010), Disaster Survey and Analysis of Morakot Typhoon. National Science Council. (in Chinese)
- Lin, C.Y. (2012), Study on the Development of the Three Major Urban Areas and Seven Regional Cooperation Mechanism to Promote Cross-border Living Area. Construction and Planning Agency Ministry of the Interior. (in Chinese)
- National Science and Technology Center for Disaster Reduction.(2011),East Japan Earthquake disaster and coping analysis: <http://satis.ncdr.nat.gov.tw>
- OECD. (2001), Local Partnerships for Better Governance. Paris.
- Peng, Kuang-Hui and Kuo, Yao-Chi (2008) "A Review of the 921 Post-earthquake Rehabilitation of the Urban Disaster Area in Taiwan", Vulnerable Cities: Realities, Innovations and Strategies, Tokyo: Springer
- Robson, B.; Barr, R., Lymperopoulou, K. & Rees, J. (2006) A framework for City-Regions, London: Centre for Urban Policy Studies (CUPS)
- Sullivan. H. and Skelcber. C. (2002), Working Across Boundaries: Collaboration in Public Service. New York: Palgrave Macmillan.
- Tang, Y.M. (2010), A Study on Disaster Emergency Communications in Countries. Journal of Crisis Management 7(1):1-14.
- Tewdwr, M. and McNeill, D. (2000), The Politics of City-Region Planning and Governance-Reconciling the National, Regional and Urban in the Competitive Voices of Restructuring. European Urban and Regional Studies 7(2):119-134.
- The Control Yuan, R.O.C. (2010), Corrected Text: <http://www.cy.gov.tw>. (in Chinese)
- United Nations. (2005), Hyogo Framework for Action 2005–2015 Building the Resilience of Nations and Communities to Disasters. World Conference on Disaster Reduction.18-22,<http://www.unisdr.org/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-actionenglish.pdf>.
- Welsh Government. (2012), City Regions Task & Finish Group-City Regions' Definition & Criteria.
- Yang, Y.N. (2009a), The Local Government System of Disaster Research - to the 921 Earthquake, For Example, Research Express NCKU Digest 8(3). (in Chinese)
- Yang, Y.N. (2009b), Study on Typhoon Morakot Relief System. National Chengchi University Department of Public Administration - Public Administration, 143-169. (in Chinese)
- Yeh, C.C. & Wu, J.H. (2006), Global City-Region, Inter-City Competition and Cooperation under Global Commodity Chain. Cross-strait Seminar 5th on the Development of Public Governance and Administration: Hung Institute of Public Administration, Zhongshan University (Guangzhou) Administration Research Center. (in Chinese)

From 'Place Apart' to Place Making: The Reinvention and Transformation of James Cook University, Townsville

Alan CARPENTER

Project Director of Discovery Rise, James Cook University, Australia

and

Caroline STALKER

Director, Architectus, Australia

Author ID: 108

Universities are facing existential challenges through reductions in funding, international competition and the emerging Massive Open Online Courses (MOOC). New wireless technologies proliferate; new pedagogies are being created for the digital natives such that the form of the physical campus is under a profound review. This paper describes one such response to these challenges.

James Cook University in Townsville was originally conceived in the 1960s as a 'place apart', separate from the City - a hallowed halls of splendid monumental buildings set in landscape designed for quiet contemplation rather than active engagement. In the 21st century JCU is a progressive institution of excellence in Tropical health and Marine science, looking to engage strongly with its city, community and the tropical regions. The campus as it has been does not support the ambitions of the institution, nor does it respond to the challenges of the future and the University is now seeking to recast itself as a vibrant mixed community, a hub of interaction and knowledge - a knowledge community within a city. This overlaying of a mixed community on the institution entails a complete transformation of the physical setting. This transformation is called Discovery Rise.

JCU is in a unique position to be able to create new models of sustainable development for the tropics, and is working with the City to deliver a community and environment which builds strongly on the connections between the institution, its partners and the city. In addition JCU's progress is offering new models of Tropical Urbanism to the city, the approach is to build on the opportunities of climate and place to create an interactive urbanism that is open, porous, shaded and cool; suited to its climate and place, and leverage strongly from the relationships between existing university buildings and a new residential community.

Key notions in design include creating a built environment in which a knowledge ecology and can flourish and evolve and a 'structured serendipity' in which innovation arises through chance encounters across disciplines, institutions and commerce.

The paper will describe the history, drivers and design of Discovery Rise as a response to the challenges, highlighting how local climate, place values and the institution itself has formed the core of the identity of the project whilst the setting is 'urbanised'.

Introduction

JCU is a multi-campus university with its principal campuses in Townsville, Cairns and Singapore and is positioning itself as an important tropical university with its strategic intent being:

A brighter future for life in the tropics, world-wide through graduates and discoveries that make a difference.

JCU's Townsville Campus bears the legacy of the 1964 master plan, which reflected campus planning principles of its day. Campus as institution was the formative typology, wherein the campus was disengaged from 'everyday distractions', which together with a 'back to nature' ethos

was regarded as beneficial to academic success and social maturity. This was a time when space was abundant and the private motor vehicle ensured access and convenience.

The 1964 plan of course reflects thinking and funding arrangements of the day. There was an expectation that tertiary education would be almost completely publicly funded with periodic grant funding for new buildings. For JCU Townsville this was the experience for almost two decades with each new building allocated its separate space sequentially around the ring road.

However since the Dawkins reform policies in 1987, Australian higher education has undergone a fundamental transformation from a traditional public service provider to a market-driven commercial enterprise.

The Dawkins reforms in 1987 provided for larger and more business-like universities with mixed public/private funding. In this era competitive advantage is gained by entrepreneurship, management skill and business acumen. Then the 2003 Nelson reforms encourage advantaged through mission diversity, specialisation and research quality.

The Bradley "Review of Australian Higher Education" in 2008 completed the process by recommending further deregulation of the sector by introducing a "demand-driven entitlement system for domestic higher education students, in which recognised providers are free to enrol as many eligible students as they wish in eligible higher education courses and receive corresponding government subsidies for those students .

For a regional University, this creates a significant challenge. We can no longer rely on allocations of funded student places, and caps on other institutions to keep our numbers up. We must be competitive with city universities, which aside from prestige and course offerings means offering amenity and a vibrant social environment.

In addition Universities are facing existential challenges through international competition and the emerging Massive Open Online Courses (MOOC). New wireless technologies proliferate; new pedagogies are being created for the digital natives such that the form of the physical campus is under a profound review.

The Campus

Many Australian university campuses, especially those in suburban areas established after WW2, have created an Australian version of the monastic model, being very institutional in appearance and atmosphere, often planned as bush campuses on a 'pavilions in the park' model. These arrangements positively encourage the development of disciplinary silos and separation from the community.

JCU's original campus design is an example of high modernist ideals from the 1950s and 60s par excellence. In the 1920s LeCorbusier's Ville Contemporaine had envisaged an 'ideal city' of free-standing buildings in park-like settings with widely spaced freeways. This model was widely embraced as a potent symbol of post-war modernity and democracy. It strongly informed the post war reconstruction of bomb-damaged European cities, and the now infamous housing 'projects' of lower Manhattan. Oscar Niemeyer took this model to a new level in an entire modernist city, Brasilia, built between 1956 and 1960, where large sculptural forms were set in grand landscape axes. The school of thinking that had produced Oscar Niemeyer also influenced James Birrell, the campus planner/architect for JCU in the 1960s. Brasilia and JCU share in common key monumental buildings set in strong landscape axes as important organisers.

¹ Out Place in the Sun – a Brief history of JCU, Dr Peter Bell, 2010

² Commonwealth of Australia, Review of Australian Higher Education, (Bradley Review) 2008 pxxiii

In the context of contemporary universities, these arrangements positively encourage the development of disciplinary silos and separation from the community. The 'hallowed halls' of city edge campuses is no longer an appropriate model for the delivery of world class tertiary education – it needs to be delivered in a dynamic environment where collaboration and interaction are the foundation of innovation and discovery. This means creating a more lively and dynamic environment.

For JCU the physical context is changing, as the city has grown and is now very much on the doorstep of the campus.

THE OPPORTUNITY

Whilst many universities in Australia are developing their land to deliver community connected urban campuses, James Cook University in Townsville is better positioned than most to achieve this due to its land resource and its proximity to urban Townsville and the Townsville Hospital. Add to this the potent unifying theme of tropical research and innovation towards a better life in the tropics worldwide and it is clear JCU has an outstanding opportunity for the development of an interconnected knowledge community.

Many of the building blocks for such a knowledge community already exist at James Cook University in Townsville, with the major weakness being the 'quality of place' and infrastructure required to sustain and grow a knowledge community. Discovery Rise also holds out the opportunity for the creation of a university community of staff and students, alumni, retired and former staff, business partners and friends of the University in a knowledge centred community with a network of collaboration, support and influence. Add to this people engaged in companion organisations including The Townsville Hospital, CSIRO, AIMS (the Australian Institute of Marine Science) and private research and development ventures and we have a diverse and effective knowledge community.

Timing appears to be apposite as well with Asian Century gathering momentum, with a consequent long boom forecast for this minerals rich province of North Queensland, strong economic and population growth will surely follow. JCU is positioning itself regionally as a great tropical university with its campuses in Singapore and Cairns prospering and growing links to South East Asia and Melanesia. Great universities require great campuses and the Discovery Rise project can deliver such an outcome for JCU Townsville.

Townsville itself is on a strong growth trajectory having the most diverse economy of any regional city in Australia and the status of Queensland's second capital. The Douglas Knowledge Community centered on the JCU and The Townsville Hospital has been identified as an "economic turbocharger in the Townsville Futures Plan with Discovery Rise being the enabler for this.

There is a growing realisation that the best enabler of a sustainable future is to have people living in close proximity to their places of work, leisure and commerce. Discovery Rise can be a leader in this regard by creating a residential community with its own economic agents at its core, with its own employment, recreation and retail opportunities; a situation which is unusual in the developed world and in Australia and unique for Townsville.

James Cook University Townsville – Knowledge Community the Urban Plan and Design Work

To become a thriving Knowledge Community clearly the campus of JCU needs to be 'retrofitted' with spaces, places and activities that encourage interaction and exchange. This means a more mixed and compact arrangement of activities and outdoor spaces that invite occupation.

The Urban Plan for Discovery Rise was prepared in close collaboration with The Hornery Institute, who are social and community planners. Their role was to help JCU to understand 'who would come' and what needed to be provided to get them there. The Urban Plan is a direct result of an integrated process of community-plan thinking and design thinking, to provide JCU with both a physical and a social framework for its reinvented campus.

The Hornery Institute's (THI) research told us that there would be different 'audiences' for Discovery Rise, who would want to be 'embedded, adjacent or afar' in relation to the University core facilities. They provided housing numbers, types and additional facilities to create a sustainable community as a design brief for the physical urban planning. Their research also told us that there were drivers for a significant town centre between JCU and the hospital, student/postgraduate village, a residential village hub, and a residential community anchored by a school within walking distance of the university core. THI's qualitative research also told us that students, post grads and residents wanted a range of facilities, a lively social environment, great public spaces, places to walk, and markets.

The planning and design challenge then was to interweave and integrate all of this new activity and life into the existing campus setting, and to create a new whole rather than 'the housing next to the uni'.

Site Structuring

The design framework for Discovery Rise emphasizes a strong urban structure to integrate, connect and mix new activities, to providing strong 'bones' to pattern change over the next 20 years or more. It builds on the Birrell legacy but 'retrofits it' as a contemporary mixed use community.

For the master plan we developed a spatial structuring defined by the key 'connectors' in the town, which build upon the original Birrell axes. These connectors link the core to the edge, creating the integration and blurring of the edges between the JCU campus and its town, create the underlying structure for land use, public space, building edges, hubs, pedestrian paths and roads.

Overlaid on the landscape connectors are:

- The public space network – incorporating the central green spine, and east-west linkages comprising streets, squares and lanes
- Ground level activation (e.g. retail)– to create lively places along the connectors
- Density - the highest residential densities are focused along these connectors
- Pedestrian and bicycle paths which converge on the connectors as well as provide permeability throughout the town
- The vehicular network supports the connectors as well as permeability throughout the town
- This gave us a street and public space structure where east-west links are characterized by cool, shady, more intimately scaled streets, courtyards and squares, and north-south connectors build on the existing loop road and central green campus spine to create larger scale spaces of movement and gathering.

The emphasis on creating a lively, continuously shady and inviting public realm on the campus is extremely important; it will provide the spaces for interaction and collaboration that a contemporary university needs, as well as the basic 'tissue' of a more compact, walkable campus.

(Dry) Tropical Urbanism

To re-cast itself as a thriving Knowledge Community it needs to be very rich in the type of spaces it currently lacks; lively, engaging public spaces of informal interaction. Air-conditioned lifestyles are very habit forming, and to successfully invite people into the public realm on this campus, even in those gorgeous winter months, needs some compelling places underpinned by some very strong planning. At present there are clues on campus for the kinds of places and spaces that invite external occupation; the earlier Birrell buildings which have very deep shaded terraces and (irrigated) shaded gardens are very successful .

In a dry tropics environment such as Townsville, it can be a challenge to get people out of their cars and turn off the air conditioning! Again it was important to be clear about the qualities of the overall environment that would encourage walking and reliance on passive cooling in buildings, and a focus on landscape, shade and breezes at the urban scale was considered vital in achieving this. This translated to an urbanism with the following characteristics:

The Fragmented/Perforated Perimeter Block;

The perimeter block is the optimal urban form for defining urban spaces and creating activity along edges. However walled urbanism in Townsville creates heat islands. Fragmenting the perimeter block to facilitate air movement and the planting of large shade trees will avoid the creation of heat islands.

Shady Edges;

Buildings edges can provide important refuges from hot sun particularly as colonnades and shaded building recesses.

A Combination of Built and Planted Shade;

Shade plays an important role in creating an inviting urban environment in Townsville. Due to the low rainfall regime for many months of the year we adopted a strategy to combine built with planted shade to create a shady network of streets and squares.

Density, Landscape and Orientation;

It's important to locate denser housing forms where there is the possibility to create openness for penetration of cooling breezes into the dwelling, provide appropriate solar orientation, and offer outlook over a benign environment. Without being too dogmatic about orientation we found that this configuration worked particularly well with the idea of shady and green east-west connecting streets.

Discovery Central and The Ideas Market

Discovery Central, located between the Hospital and the heart of JCU, is the perfect location for the first centre of Discovery Rise to develop; and the first building of this new centre is now under construction. Discovery Central is envisaged as a mixed use hub incorporating research and teaching facilities, housing and accommodation, and localized retail. The master plan for Discovery Central revolves around a new main street – Mt Stuart St – which picks up on the original Birrell axis and lines up with the bluff of Mt Stuart. Mt Stuart St will be a shady low speed highly pedestrianised environment with trees in the street reserved to cool the tarmac and interactive street frontages along its length.

The anchor public space for Discovery Central is the JCU Ideas Market. The JCU Ideas Market is a concept that is at the heart of the creation of a Knowledge Community: it is a place of intellectual, social and commercial exchange, bringing together JCU and the Townsville community. The concept has at its centre a strong idea, shared by JCU stakeholders, to create a new beating heart for its campus, and in doing so invite all the endless possibilities of exchange into its place. The Ideas Market is envisaged as a kind of 'Souk' of activities – markets, shops, living, Uni activities around the edge of a significant shaded, cool and welcoming public space.

The Clinical Practices Building is the first building of the town centre containing Dentistry, Physio and other clinical uses including teach areas, as well as a small scale fresh food supermarket and small scale retail. It is designed to address and shelter the street, and create an interactive lively street on Mt Stuart St.

Discovery Village

The design of Discovery Village – the primary residential village – needs to offer new models for denser housing in Townsville; this work is being monitored by Townsville City Council who is keen to see local exemplars develop of denser housing forms suited to the climate and place.

The principles for creating climatically suitable housing in Townsville are well known by local architects and those living in homes built before air-conditioning; we didn't set out to re-invent the wheel but to build on good knowledge. Local architects and pre 1960s housing utilized devices such as: shallow (one room deep) plans and fragmentation of the overall form to facilitate cross ventilation; 360degree shading of walls (including with vegetation); use of thermal mass to create thermally stable 'tanks' of cool air (e.g. under the house, shaded courtyards); and optimum solar orientation. What has been lacking is a similar 'accepted wisdom' or exemplars about denser housing forms or how these would come together in an 'urbanism'.

Our earlier work had helped us to establish urban design principles of cool narrow east-west streets for people, wider shaded north south streets for cars, fragmented perimeter blocks, and 'cool tanks', but in the Discovery Village project we needed to consider how the two scales of the urban and the individual building might mesh to create an urbanism. The idea of a 3-dimensional lattice seemed to capture the idea of an environment that was close knit, but permeable to air movement, trees and people, with cool shaded pockets. We first tested these conceptually using balsa models then developed these as three denser housing forms; the Courtyard House (on 320m²), the To-To (Townsville Townhouse) and the Lattice Apartment.

The Courtyard House takes a simple shallow plan, split by a breezeway, to capture a cool courtyard at its heart. The To-To uses either a stepped plan to capture light and breezes, or an internal covered courtyard to move cooler air through the dwelling. The Casbah Apartments use a fragmented plan and a stepped section to create light and air movement around central courtyards, whilst providing a strong inhabited edge overlooking the street and the green corridor at the heart of the precinct.

IMPLEMENTATION

The scope and ambition of Discovery Rise is such that primary development will take place over 10 to 20 years, but in another sense will never be 'finished' as success will be embodied in a flexible and open community an urban landscape, continuously morphing as new enterprises respond to new opportunities.

Rather, the primary role of implementation is to establish what Jeb Brugmann has termed a practice regime. In his *Welcome to the Urban Revolution – How Cities are changing the world*, he has that successful cities and urban precincts are characterised by a „practice regime with three necessary components

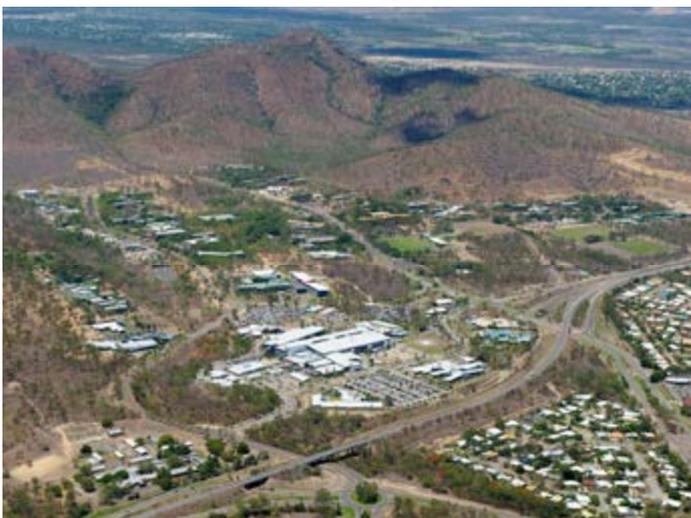
- **Strategic Alliance:** A stable alliance of organisations with power and resources to align interests and to form or reform policy and the regulatory and administrative apparatus in pursuit of a common strategic purpose. Towards this end JCU is engaging with all levels of government with a view to building alliances. This intent is illustrated by a recent MOU with the Townsville Hospital towards an alliance for collaborative development in Townsville towards the creation of a Tropical Knowledge and Health Services Precinct.
- **Strategic Institutions:** A set of dedicated institutions with the technical talent, financial and entrepreneurial capability and administrative power to advance the knowledge community and its new practices of urbanism. Towards this end JCU is establishing a separate entity whose charter it is to implement and realise the Discovery Rise Vision.
- **Practices of Urbanism:** An explicit and detailed body of urbanist practices which translate the vision into a fit for purpose built environment and social and cultural milieu. Towards this end JCU has developed its physical planning from initially process driven formulaic work to highly sophisticated plans with university community development and the knowledge economy underpinning the more obvious elements.
- This paper has given the outline of the urban design response towards the third component. Work on the other two arms is proceeding in parallel – but that is another story for another paper.

³ Brugmann J, *Welcome to the Urban Revolution – How Cities are changing the world*. University of Queensland Press, 2009

From 'Place Apart' to Place Making

The Reinvention and Transformation of James Cook University Townsville

Caroline Stalker Director, Architectus
 Alan Carpenter Project Director of Discovery Rise, James Cook University



architectus™

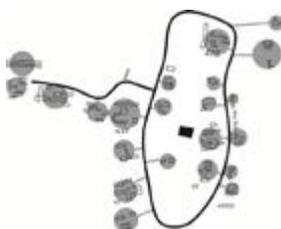


Existing Conditions: Key Influences

Landscape setting - primary organiser for 1964 Birrell master plan
 Need for evolution of this to respond to urban connections, western campus

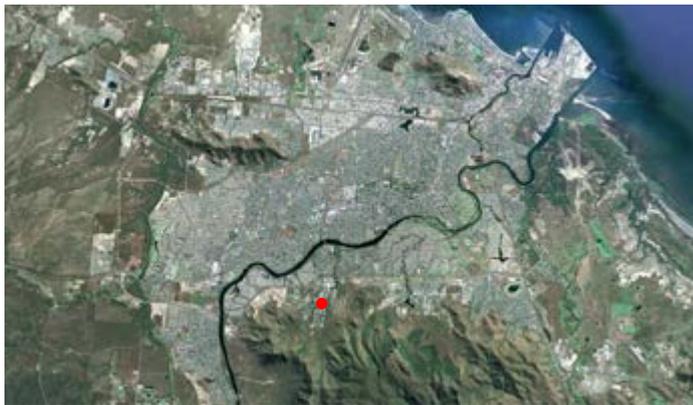
architectus™

architectus™



Car dominance and fragmentation

- Landscape setting powerful.
- Birrell buildings important 'set pieces'
- Open, relaxed tropical landscape setting essential quality of JCU
- Good bones exist - axes, landscape, Birrell buildings.



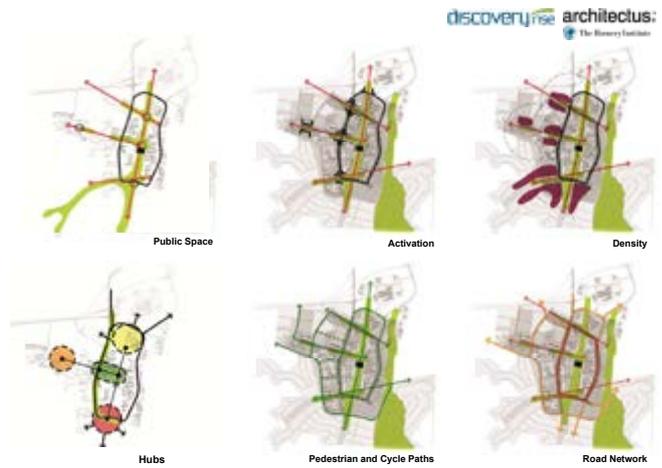
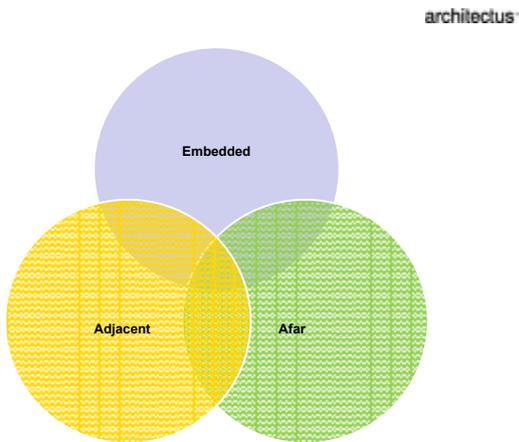
JCU's Vision

The creation of a university town with a distinctively Australian tropical ambience which will incorporate energetic academic, social, artistic and commercial environments. It will be an integrated community of living and learning that will set a new benchmark in sustainability.

Community Plan Elements

New population for Discovery Rise of 5444 people. This population would be made up of the following audience segments. In addition there are 1000 students already living on campus.

Scenario 1 - Discovery Rise Residential Hub		AUDIENCE AND DEMOGRAPHICS		Total DR	Townsville
A	A Privileged Prosperity	6.00%	268	2.76%	4,249
B	B Academic Achievers	37.40%	1,644	3.51%	5,392
C	C Young Ambition	5.00%	214	1.68%	2,588
D	D Pushing the Boundaries	20.70%	923	14.29%	21,971
E	E Family Challenge			36.07%	55,449
F	F Metro Multiculture				22
G	G Learners and Earners	24.49%	1090	4.76%	7,320
H	H Provincial Optimism	1.40%	63	6.22%	9,558
I	I Farming Stock			8.63%	13,268
J	J Suburban Subsistence	3.30%	149	16.18%	24,876
K	K Community Disconnect	1.70%	78	5.87%	9,019



Climatically Responsive Urbanism



The Fragmented Perimeter Block

Shady Edges



Shady Edges

Dry tropics – same rainfall as Brisbane but all in the wet season

Encouraging walking a challenge in summer

Avoid heat islands

Minimise A/C reliance

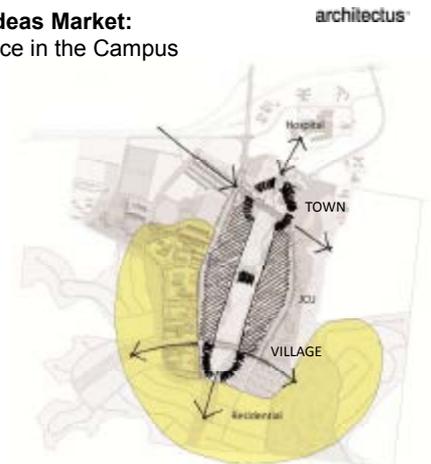


Built and Planted Shade



(Dry) Tropical Urbanism

The Ideas Market:
 Its place in the Campus





Mt Stuart St and The Ideas Market

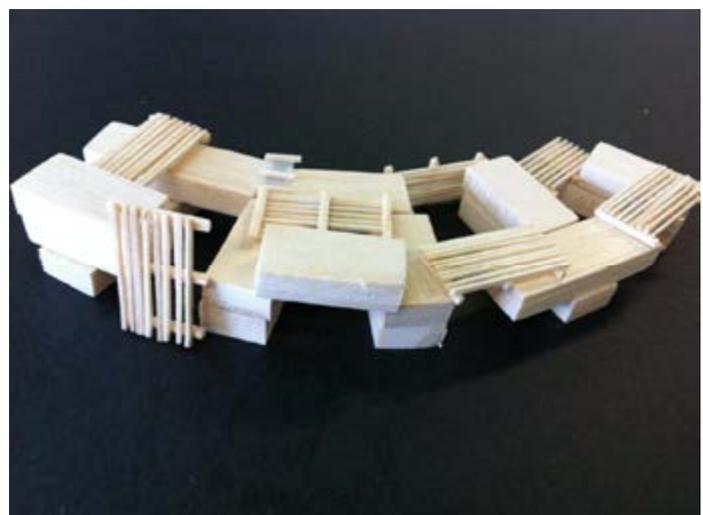
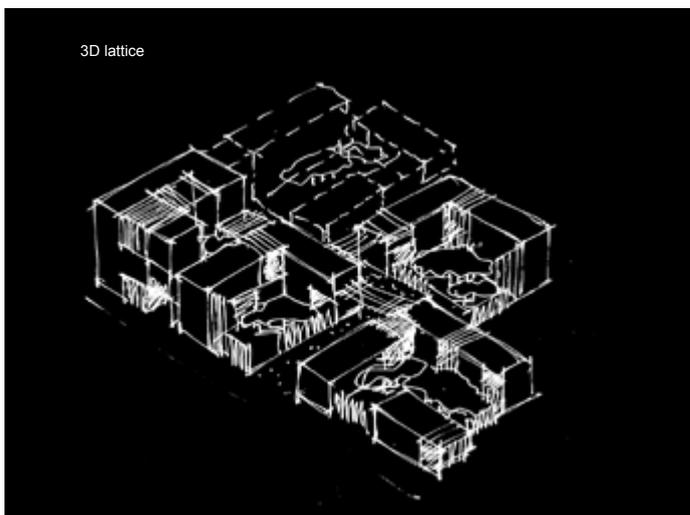
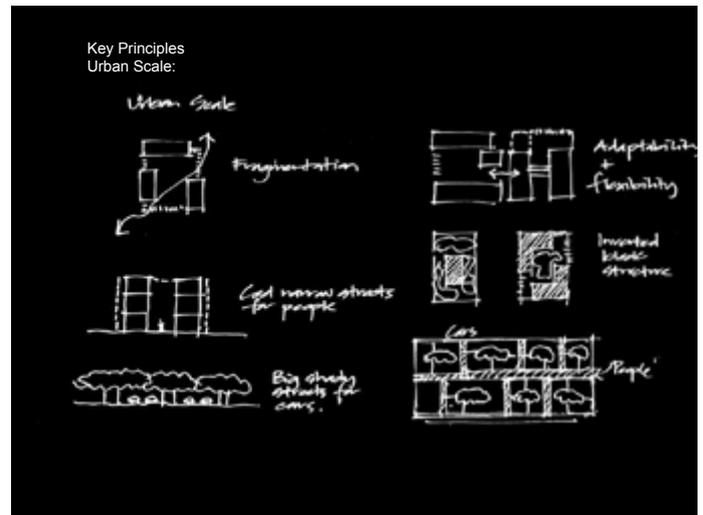
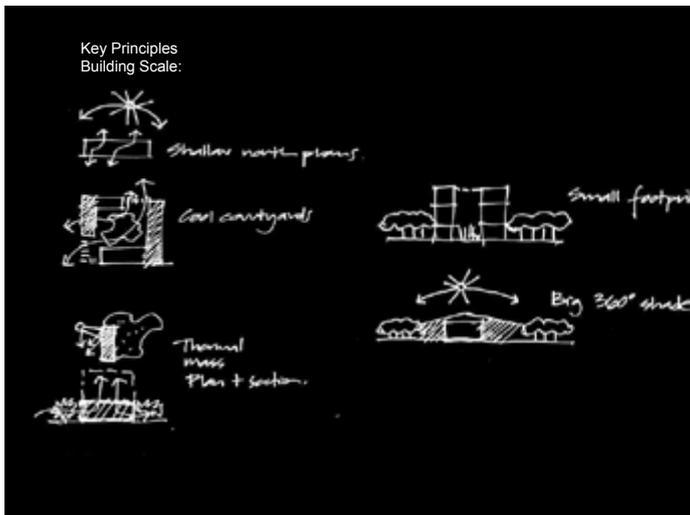


What's in the Market Place:

- CBP entry and reception
- Sandwich shops
- Bank
- Pub + bottle shop
- Small Asian cafes
- Weekly markets
- Juice bar
- STA travel agent
- Ice cream shop
- Hairdresser
- Printers/stationers/binders
- Chemist
- Cornerstone Entry
- Block teaching space entries
- Screen for projecting keynote lectures
- Markets



JCU Clinical Practice Building – Nearing Completion





Courtyard Houses on Small Lots



Courtyard Houses on Small Lots



To-to's; Townsville Townhouse



Townsville Townhouses; To-to



Courtyard apartments



Courtyard Apartments

Tweed Coastal Hazards – Is The Plan Working?

Mike Svikis, MikeSvikisPlanning, NSW, Australia

Katrina Burbidge, GHD, NSW, Australia

1. The Tweed Shire Coastal Hazards Development Control Plan (Section B25)

With the threat of coastal erosion and inundation on public and private property so evident up and down the NSW coast, governments of all levels need to equitably manage the impact of this on coastal landowners without unfairly penalising them or the general community.

GHD planners worked closely with Tweed Shire Council to prepare a Development Control Plan (DCP) that recognizes the potential threat of coastal erosion and rising sea levels on existing and proposed development along the Tweed Coast in Far North Coast NSW. The DCP was adopted by Council in September 2011.

Property in the coastal hazard zone (despite its potential hazard) will probably always be in high demand because it has unique characteristics such as ocean views, short walk to beach, cool coastal breezes and a high current utility value. Coastal property buyers are more likely to be influenced by interest rates, unemployment levels and the current state of the Australian economy than a 50 year plus prediction of coastal erosion. There will also always be a need for public infrastructure and facilities in the coastal hazard zone including our iconic surf lifesaving clubs.

It is therefore appropriate that local government uses planning policy to inform prospective purchasers (and coastal zone users) that some coastal property is affected by a natural hazard that should be considered when evaluating what a property is worth, what it can be used for now and what it might be used for in the future. It is also appropriate that the level to which property is affected by coastal hazards correlates with the level of controls that are imposed upon it.

The DCP draws on existing sources of data (Coastal Zone Management Plan (2005) and the Tweed Coastline Hazard Definition Study (updated in 2010)). It adapts the approach of other coastal Councils such as Byron Shire Council and Pittwater Council as well as referencing key State government guidelines and policy advice. GHD had to work closely with various stakeholders to achieve a balance between the NSW State government position (which has since changed) and the local Council and community.

The DCP assists in allowing land affected by coastal hazards to be used in a way that is proportional to that hazard over a suitable time frame. It will also ensure that new development incorporates resilience to coastal hazards. It provides a clear basis on which to evaluate development applications in the coastal areas of Tweed Shire. The development controls are grouped into three “Hazard Zones” which are illustrated in Figure 1:

Figure 1: Application of Hazard Lines and Zones on the Tweed Coast



- Immediate Hazard Zone – that land between the Immediate Hazard Line and the waterline. No habitable development permitted. Development relating to uses that are required in the Immediate Hazard Zone and are temporary in nature (e.g. lifesaving observation structures, access structures) may be considered.
- 2050 Hazard Zone – that land between the Immediate Hazard and the 2050 Hazard Lines. Permissible development to be subject to a Coastal Risk Management Report and where development is granted consent, it is granted on the proviso that if the erosion escarpment comes within 20 metres of any building then the use of the building will cease. It is proposed that Section 88E of the Conveyancing Act, 1919 be used to achieve this. If the use of the building does cease then the owner of the land will be responsible for the removal of any or all of those buildings (possibly to a location further than 20 metres from the erosion escarpment, if relocatable).
- 2100 Hazard Zone – that land between the 2050 and 2100 Hazard Lines. Permissible development to be subject to a Coastal Risk Management Report. The main considerations in this zone are that development is positioned to avoid the risk of damage from coastal processes and avoid the need for physical structures to protect that development.

The DCP not only provides clear direction, it also strikes a balance between respecting the existing land use rights for owners of private coastal lands and users of public coastal lands and the need to avoid excessive public expense on protecting private assets.

The DCP through the use of hazard zones overlaid on digitally corrected air photos for easy interpretation, takes a risk based approach with controls being less onerous the further landward you proceed. Landowners have a right to enjoy their property while it is still there

even if it cannot be protected in 40 or 50 years' time. There is a place for planned retreat of privately owned lands in the coastal zone and it is an important planning tool to include in this DCP. Importantly, the planning tool reflects the existence of a hazard that does not discriminate between public and private coastal land.

A number of government and non-government stakeholders have a role in managing coastal pressures and issues. The local Council plays the most important role in managing built form and development through the day to day application of the land-use planning system.

Land-use planning decisions often have long-term implications. The Tweed Coastal Hazards DCP is an example of how local government can take an informed and precautionary approach to planning for new development, infrastructure and services to avoid or reduce the consequences of coastal hazards over the expected lifespan of the development.

2. What Has Happened Since Then?

Soon after the DCP was adopted there was a series of major coastal erosion events on the east coast of Australia, including the Tweed Coast. The beach at Kingscliff was hit hard with the southern end losing around 50 m including the entire dune system, all mature vegetation as well as open parkland and a public road (refer to Figure 2). A caravan park and the Cudgen Surf Life Saving Club (SLSC) were also threatened. More recently this erosion has impacted on the Fingal Head area.

Figure 2: Coastal Erosion at Kingscliff



Tweed Shire Council has been implementing its Coastal Zone Management Plan which nominated protection for the Kingscliff embayment. This has taken the form of 6300 tonnes of rock placed along the foreshore as “interim” protection and a permit to pump sand from the nearby Tweed River onto the beach at Kingscliff to restore dunes and the beach profile in front of the new rock wall. The first installment of 14,000 cubic metres of sand has been already been placed on the beach.

Council has commissioned a study to update its coastal hazard definition lines in light of improved modeling and data on sea level rise predictions. Early indications are that the 2050 and 2100 hazard lines may move a little more to the east. When new hazard lines are available and are adopted the DCP will be amended to include them. In the event of a dispute, keeping the DCP up to date will assist Council if it needs to enforce its conditions such as cease of use and removal of structures.

A general slowing of the sale and development of property on the Tweed Coast in response to the Australian economy has led to there being less than ten development applications for land affected by the DCP (about 185 privately owned lots are affected). The majority of the applications have been for minor alterations and additions. Several applications have demonstrated the application of the DCP and two examples are provided below.

2.1 Fingal Rovers SLSC, Fingal Head

The Surf Life Saving Club (SLSC) at Fingal Head is located on Crown land at the eastern edge of Fingal Head village on the Letitia Spit and services the northern beaches of Tweed Shire.

The existing club house is located in the 2050 Hazard Zone but is hard up against the Immediate Impact Zone. The club house was old and in poor condition and the club initially wanted to build a re-locatable structure. A re-locatable structure would be difficult on the current site as it is surrounded by a caravan park owned by Crown lands and is in close proximity to open space.

However, the application that was finally submitted was for the re-use of the existing site. This included utilising the existing slab and some of the existing structure but with a new fit out based on the old footprint. The intent was that the kitchen, toilets and showers could be moved to the back of the building so that the front could be abandoned if the erosion escarpment came too close. The club thought they would get 25 years of use from their fully renovated building. It was approved and construction of the front section was completed by December 2012.

At the time of approval there was approximately 35 to 40 metres of stable and mostly vegetated dune system to the east of the club house. A major erosion event occurred in May 2013 and 15 metres of beach and dunes was lost over two days. The beach escarpment was in excess of 3 metres high and over the next week came to within 11 metres of the new club house (refer to Figure 3).

Figure 3: Beach Erosion at Fingal Head in August 2013



In accordance with the DCP Council had imposed a condition on the SLSC as follows:

“As the development subject of this consent has been identified as being within one or more of the Coastal Hazard Zones as described in Tweed Development Control Plan B25 this consent is subject to the owner of the subject land PRIOR TO THE ISSUE OF AN OCCUPATION CERTIFICATE creating a positive covenant under section 88E of the (Conveyancing Act, 1919) on the following terms:

“(i) The registered proprietor of the subject land acknowledges that the subject land is within a Coastal Hazard Zone as described in Tweed Development Control Plan B25 or any other subsequent iteration of that planning instrument.

(ii) The registered proprietor also acknowledges that any development within the subject land must comply with the terms set out herein as follows:

a. In the event that the erosion escarpment comes within 17 metres of any habitable building/s on the subject land then the use of any building/s shall cease and the registered proprietor of the subject land shall remove any or all buildings to a location on the subject land that is further than 17 metres from the erosion escarpment where possible, or off site where not possible. In the event that relocation is not possible, then any affected building shall be demolished.

b. The registered proprietor of the subject land shall bear all costs in relation to the relocation or demolition of any or all buildings located on the subject land.

c. The terms "Coastal Hazard Zones", "erosion escarpment" and any other references of this covenant are to be read as having the meaning in accordance with their definitions in the Tweed Development Control Plan B25.”

The SLSC did cease use of the new building, however the erosion event subsided and the sand has now been restored so that the escarpment is approximately 20 metres from the club house. Its occupation has resumed, but the beach is still vulnerable to further erosion and the club is still within one “storm bite” of being abandoned and demolished.

The new club house has cost the surf lifesaving movement and various levels of government and the community about \$650,000 and requires an additional \$250,000 to be completed. Although the DCP has been effective in imposing conditions on the application that ensured public safety, it is not clear that the imminent danger to the existing site was recognized by the applicant in lodging an application for a permanent structure in that location. The involvement of the Crown in selecting a less erosion prone site on Crown land nearby may have been a wiser use of scarce community resources in the long term. If the beach rebuilds and the surf club gets its estimated 25 years of use out of its new club then so be it. However, if the erosion returns sooner than that (as predicted) and the new building becomes dangerous and requires demolition it should be a clear lesson to take the Hazard Definition lines in the DCP seriously and look harder for alternative sites for valuable public infrastructure.

2.2 Dwelling at Hastings Point

In this situation a privately owned block of residential land at Hastings Point contained three small older style single storey holiday units. The existing structures were all within the 2100 Hazard Zone though quite close to the 2050 Hazard Line. The lot is located on an old parallel beach dune that is quite elevated, at about 15 m above sea level. At the time of the application there was at least 80 metres of stable and mostly vegetated dune system to the east of the site. The application was to demolish the three units and build a single large dwelling on the lot. A three storey block of units had been approved on the lot beside it several years earlier.

This application poses some interesting dilemmas. Reducing the number of dwellings in the 2100 hazard zone from three to one is a good outcome. The new dwelling was to be located as far back from the 2050 Hazard Line as it could be. The shape and geography of the site is unusual as it is a "battle axe" lot and a demountable dwelling would be difficult to remove. The height of the dune means as the escarpment comes closer; the dune becomes more unstable with potentially a 15 metre drop to the beach. The coastal risk management report recommended deep pile foundations to keep the building as safe as possible, for as long as possible. Council required the landowner to acknowledge in writing the coastal hazard on their own land and accept the risk and responsibility with construction of this building in this location.

In the case of the Hastings Point embayment the recent coastal erosion has not been as severe and the new house has been completed and is occupied. There is still 70 metres of vegetated dune east of the site. In this case the DCP has allowed useful occupation of the land for as long as possible, which should be another 35 years if the modeling is correct. The awareness of the hazard has been created and the applicant has invested in the safety of their building at the outset, acknowledging that in the long term it is likely to be at risk.

Figure 4: Beach Erosion (or lack of) at Hastings Point



3. Conclusion

It's still early days for the Tweed Shire Coastal Hazards Development Control Plan (Section B25). With about 185 private properties affected by coastal erosion plus numerous parcels of public land, there is still plenty of opportunity for controversy and mistakes as well as good planning outcomes. However, early indications are that the DCP has raised awareness of the issue of land affected by coastal hazards and has made applicants think about how they approach their development. The most recent examples of erosion at Kingscliff and Fingal Head have silenced some of the community that previously suggested the erosion was never going to happen and that the Hazard Definition Study was over stating the risk. The cost of protecting the Kingscliff embayment with an interim rock wall has demonstrated that protection works are not a cheap or easy alternative to good planning. The interim works have cost \$2.5 Million. A permanent, engineered rock wall 450 metres long with sufficient sand nourishment to restore the beach in front of it is estimated at between \$10 Million and \$20 Million depending on sand nourishment costs.

Coastal risk management reports have been produced for applications with site specific recommendations and Council has imposed conditions acknowledging risk and responsibility and requiring action when certain erosion events occur. Purchasers of land are notified when it is affected by coastal hazards before they purchase it. So far the DCP is doing its job, let's hope the political will (at local, State and Federal level) to support such controls remains in place.

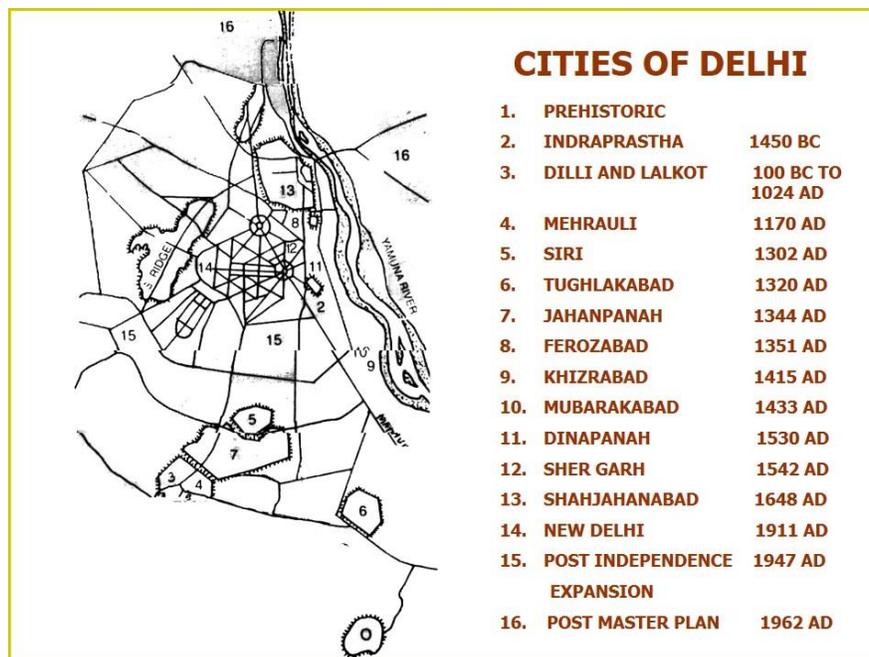
The authors acknowledge the assistance of Jane Lofthouse and Barry Stegman of Tweed Shire Council for supplying with photographs and information on Development Applications.

AN APPROACH TO CONSERVATION OF BUILT HERITAGE – DELHI MASTER PLAN PROVISIONS.

By – P.S.Uttarwar
 Director (Planning)
 Delhi Development Authority
 (psuttarwar@gmail.com)

ABSTRACT

Delhi is an ancient city with rich historical mile stones and heritage. Historically Delhi has been a capital city for many dynasties and rulers. Each ruler and dynasty left its impression and foot prints in the form of monuments, heritage buildings and capital complexes. The rulers have been conscious of Delhi’s past. Their desire to protect the past has influenced protection and conservation of built heritage. Archaeological survey and Public Works Department of British India began this task in the later 19th century and after independence ASI has become protector of India’s heritage. At a later date Master Plan documents attempted to make provisions for protection and conservation of built heritage. Right from the first Master Plan of Delhi 1962 to the Master Plan of Delhi 2021, each document contributed and perfected conceptual frame work, approach and policies for protection and conservation of monuments in Delhi.



1. INTRODUCTION

Delhi's Heritage

Delhi is an ancient city whose history dates back to the time of Ashoka. This region is uniquely situated in terms of its location. It is a triangular area bound by Yamuna on east side, and by the Aravalies on the south and west side.

For the most part of its history it has been a capital city. The history of Delhi begins from the Ashokan rock edict and comes through centuries to Lutyens Imperial capital and finally to being the capital of the Indian Republic. Delhi has witnessed numerous ups and downs during this history.

Protecting this heritage represented by a mosaic of Capitals and villages is a very big challenge. Through the years right from perhaps Ferozshah's time, rulers have been conscious of Delhi's past, their attitudes and the thinking about past which has influenced protection and conservation of built heritage. Alexander Cunningham's Archaeological Survey and the PW Departments of British India were responsible for protection and maintenance of monuments. After independence, ASI has become sole agency for protection of heritage. Even today it continues to function with the same rules and regulations drafted during colonial times. Following is a brief summary of the agencies involved in conservation and provisions of the previous Master Plans.

- a. **ASI:** The rules and legislations for protection of Heritage laid down by the British have not changed much till date. Their definition of Built Heritage is monument based.
- b. **Master Plan for Delhi 1962:** The first Master plan was prepared during a time when the concepts of Heritage and Conservation in India were in their infancy stage. The master plan provided for a number of green spaces to be reserved for the city. Most of these greens were around monuments and this has resulted in protection of a number of monuments.
- c. **Master Plan for Delhi -2001:** In the second Master Plan the aspect of conservation is dealt under a different subheads. Environment is section that talks about the conservation of the walled city. The section on Special Areas also mentions restoring the glory of the Walled City. Urban villages, which are an important component of the heritage are under the section of Shelter, it rightly mentions that heritage development should be a part of the overall development. The Master Plan was in accordance with the conservation thought of the day. Due to scattered scheme of conservation thoughts, implementation was a difficult task.

In the 90's, MCD and NDMC published lists of buildings, which were 'Protected'. In absence of any legislation or procedures, these monuments remained protected theoretically only.

The ASI protects 164 odd heritage structures in Delhi, besides these the local bodies have also published lists are follows:

MCD: 775 buildings

NDMC: 112 buildings

These are ridden with number of problems.

- The World over thinking about heritage has changed radically. The 'Monument' approach has been discarded as being insufficient to protect the Built Heritage. This built heritage needs to be treated as heritage areas or zones.
- It is necessary to identify what is to be done with these buildings? Who will do it? and What conceptual approach lies behind the whole process?
- The lack of appropriate plotting and mapping has resulted in encroachments and deterioration in heritage areas/buildings.

INTACH inventory of Delhi of built heritage of 1208 buildings was published in the year 2000.

2. Conceptual Framework On Conservation Aspect For MPD 2021

Our heritage is the result of interaction of three forces. i) **People** - occupies a geographical area ii) **Place** – where building activity takes place and through iii) **Time** buildings and cities take shape. Understanding of People, Place and Time gives us the context for understanding Heritage. It also helps us in evaluating the heritage. Fundamental to the approach for conservation of the build heritage is the understanding of heritage as a **Resource**. Such an understanding means that like all Natural resources built heritage is also subject to development pressures and exploitation and has to be protected from these threats. The notion of sustainability widely used for natural resources is also applicable for built heritage. Sustainability necessarily means the use of the resources in a matter that does not compromise on the ability of future generations to use and enjoy it.

Managing the natural and built heritage of this complex cultural entity is an enormous task. This cultural entity or **Culture Region** has a range of **Natural and Built Heritage**. This heritage is a valuable resource but is threatened due to pressures of urbanization and development. Historically there had been a symbiotic relationship

between the natural and the manmade heritage. This relationship can be identified as cultural landscapes. Tughlaquabad, the capital of the Tughlaqs utilized the landform for construction of the capital. Even if the Natural and Built heritage are within this Culture Region there is a whole range of components that have to be identified and conserved. Some of these components are as follows:

The River

Ridge: Northern, Central and Southern

Streams

Agricultural areas

Water Bodies: Ponds, tanks and lakes, Quarried lakes

Villages : Chirag Delhi, Nizamuddin, Kotla Mubarak etc.

Historic Capitals: Tughlaqabad, Jahanpahah, Shahjahanabad etc.

Conservation is not freezing a place in time or denying development. Rather it stresses that the development has to occur in relation to the existing built heritage and the relationship with the natural resources. Conservation of Built heritage can not be compartmentalized under a heading and done with. Effective protection and Management of Built heritage requires that the concerns of heritage be reflected in all areas and be integrated with Planning process.

The aim therefore is to formulate a **Conservation Management Plan** for Delhi's heritage, based on understanding of Heritage as a resource.

- Definition of Heritage Zones: The definition of the zones have to be based on understanding of the wholeness of the particular resources. New Delhi is one entity and has to be defined as such. The walled city of Shahjahanabad is again another entity.

2.1 GENERAL POLICIES

Policies to be applied in conservation areas of Delhi has to based on database of built heritage resources of Delhi. However a broad generalization may be done based on an accepted attitude towards heritage.

- **Information Management**

A detailed database is very important for informed decision making. The database has to be comprehensive and open ended. It has to be compiled from detailed inventories. The database has to be organized so that it can be answer multiple criteria queries and is updateable. The decisions for resources management can only come from a thorough database.

- **Legal**

Certain terms, processes, powers, responsibilities duties etc. regarding Conservation, should be defined and included in the Act/Master Plan. Once it is defined in the act, the process becomes mandatory and ensures that Conservation of Cultural Heritage remains a priority.

- **Administrative**

In administrative setup the role of any special body should be strictly advisory in nature. There might be a tendency to leave the heritage entirely to this body while the planning process continues regardless.

- **Financial**

The financial policies are to be based on the understanding of ownership status of the structure to be protected. For the private properties various instruments like soft loans, tax relief and tax concessions have to be worked out.

- **Technical**

Structural conservation is a very technical subject and there is a serious lack of data on construction processes and materials. Regular maintenance and the awareness of the occupants is very crucial for the health of the building. At building level following need to be prepared.

- Specifications for conservation work
- Manuals on structures and materials
- Manuals for housekeeping and maintenance
- Architectural control guidelines for new development

- **Education and Awareness**

Heritage is a vast source of learning and education. Awareness about heritage is very crucial for conservation. All possible means should be used for this purpose. The results of the collected database can be synthesized to feed into the awareness programs.

- **Monitoring and Reviewing**

Monitoring and reviewing are very important if the Master Plan provisions are to be implemented. Preparing action plan with prioritization and setting of long and short-term objectives is a very important task.

3. PLAN FOR A CONSERVATION ZONE

Conservation of the historic areas has to be an integral part of the planning process. The qualities to be conserved include 'all the elements that express the character of the place'. This identified as Heritage Components, which can be defined in terms of spatial extent.

a. Qualities to be preserved

- Urban patterns as defined by plots and streets.
- Relationship between buildings and green and open spaces
- The formal appearance, interior and exterior of buildings as defined by scale, size, style, construction, materials, colour and decoration
- The relationship between the urban areas and its surrounding setting, both natural and material
- Various functions that the area has acquired over time

b. Delineation of zones

It is clear from the statistics that two most critical things are the identification of ownerships and secondly the demarcation of exact boundaries on the map. The boundary delineation is a critical process and includes the following tasks:

- A detail inventorying of the heritage components.
- Identifying the spatial extent of these components on plan
- Defining the extent of the zone based on the inventories and the historical studies
- Identifying a buffer around the zone for protect.

The definition of the zones has to be based on understanding of the entity.

Understanding of Delhi as Historic Capitals and Villages interlinked by numerous water bodies and streams gives us a better perspective for defining the '**zones**'.

Capitals

- Lal Kot, Quila Rai Pithora
- Siri
- Tughlaquabad, Nai Ka Kot, Adilabad
- Jahan Pahah: Chirag Delhi, Khirki, Begumpur, Hauz Rani

- Firoz Shah Kotla
- Purana Quila
- Sharhjanabad: Chandni Chowk, Katra Neel, Bazar Lal Kuna, Dharampura, Jama Masjid, Red Fort, Lothian Road, Daryaganj
- Lutyens Delhi: Connaught Place, Jantar Mantar, Central Vista, Bungalow Zone

Historic Villages

- Nizamuddin: Humayuns Tomb, Barapulla, Hazarat Nizamudding
- Mehrauli: Zafar Mahal, Mehrauli Bazaar, Qutb Complex.
- Hauz Khas

Clusters of monuments

- Lodhi Gardens
- Delhi Golf Club

This perspective also opens up the possibility of identifying more heritage zones based on the techniques of inventorying. Such as definition is a big exercise in itself and needs comprehensive understanding of the heritage resources of Delhi.

Urban Villages

Many of the urban villages are historic and remains of the past are worthy of conservation. However they have undergone various degrees of transformations. These have to be surveyed for their heritage resources.

4. Contents of the Conservation Plan

For any conservation plan participation of the occupants of the area is very crucial. Such plan may have following components:-

- a. Heritage components and their ownership**
- b. Traditional and historic Housing Stock**
- c. Land use policy**
- d. Physical Infrastructure**
- e. Traffic and Transportation**
- f. Information management**
- g. Education and awareness**
- h. Tourism**
- i Capacity Building**

'Capacity building' is the process and means through which individuals and Organizations develop the necessary skills and expertise to manage their environmental and natural resources in a sustainable manner within their daily activities.

5. MASTER PLAN 2021 PROPOSALS

For the first time Master Plan for Delhi 2021 included a separate and dedicated chapter on "conservation of built heritage" in the text of Master Plan, this chapter includes.

- **CONSERVATION STRATEGY**

A common conservation strategy for all the agencies concerned with protection of Delhi's built heritage is necessary. All the agencies should prepare appropriate action plans with the aim of framing policies and strategies for conservation. The strategy should include promotion of conservation of the civic and urban heritage, architecturally significant historical landmarks, living monuments, memorials and historical gardens, riverfront, city wall, gates etc. Interaction and coordination between all these agencies must be part of overall strategy. All the agencies should follow common database, definitions and guidelines for development, redevelopment, additions alterations, repairs, renovations and reuse of the heritage buildings.

- **HERITAGE ZONES**

Heritage Zones an area, which has significant concentration, linkage or continuity of buildings, structures, groups or complexes united historically or aesthetically by plan or physical development. The following areas have been identified as Heritage Zones as indicated in the Zonal Plan.

- i) Specific heritage complex within Walled City of Delhi, Shahjahanabad.
- ii) Specific heritage complex within Lutyens Bungalow Zone.
- iii) Specific heritage complex within Nizamuddin and Humayun's Tomb Complex.
- iv) Specific heritage complex within Mehrauli area.
- v) Specific heritage complex within Vijay Mandal-Begumpur-Sarai Shahji-Lal Gumbad.
- vi) Specific heritage complex within Chirag Delhi.

- **ARCHAEOLOGICAL PARK**

Archaeological Park in an area distinguishable by heritage resource and land related to such resources, which has potential to become an interpretive and educational resources for the public in addition to the value as a tourist attraction.

Though the priority are the historical structures and the built heritage, ecological and landscape aspects are not excluded.

All decisions regarding Built Heritage in general and Archeological Parks in particular should be based on evaluation of the pertinent aspects like form and design, materials and substance, use and function, traditions and techniques, location and setting, spirit and feeling and other internal and external factors.

The following areas have been designated as Archaeological Parks:

- i) Mehrauli Archaeological Park.
- ii) Tughlazuabad Archaeological Park.
- iii) Sultant Garhi Archaeological Park.

Other area can be added to the list on the basis of studies.

- SPECIAL CONSERVATION PLANS

Each local body/land owning agency should formulate "Special Development Plans" for the conservation and improvement of listed heritage complexes and their appurtenant areas. Alteration or demolition of any listed heritage building is prohibited without the prior approval of the Competent Authority.

The development plans/schemes for such areas shall conform to the provisions, in respect of Conservation of Heritage Sites including Heritage Buildings, Heritage Precincts and Features Areas.

CONCLUSION

The Master Plan 2021 has brought focus and vision with respect to Conservation of Built Heritage. For the first time the idea and concept of Heritage Zone, Archaeological Park has been introduced in the Master Plan document. The scope of Heritage encompasses monument along with linkages or continuity of buildings, structures or complexes united historically or aesthetically. Similarly Archaeological Park is an area distinguishable by heritage resource and land related to such resources. Inclusion of these entities in Master Plan document makes it potential area for protection, conservation and an integral part of planning process.

CONSERVATION OF DELHI'S BUILT HERITAGE

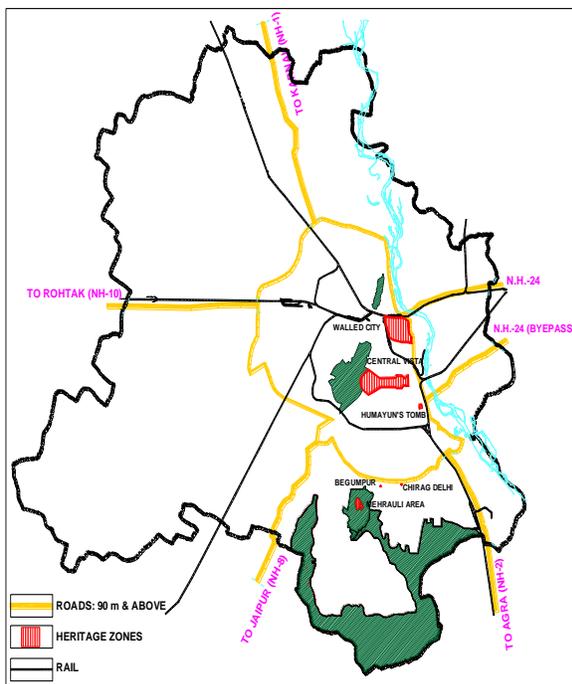


CONSERVATION OF BUILT HERITAGE

HERITAGE ZONES

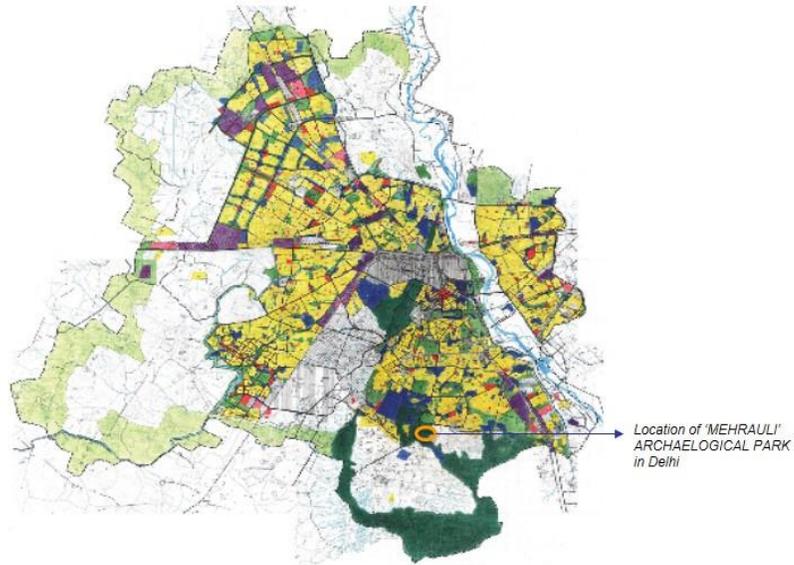
The following areas have been identified as Heritage Zones:

- Walled City of Delhi, Shahjahanabad
- Central Vista
- Nizamuddin and Humayun's Tomb Complex
- Mehrauli area
- Vijay Mandal – Begumpur – Sarai Shahji – Lal Gumbad
- Chirag Delhi



AN APPROACH TO CONSERVATION OF BUILT HERITAGE – DELHI MASTER PLAN PROVISIONS.

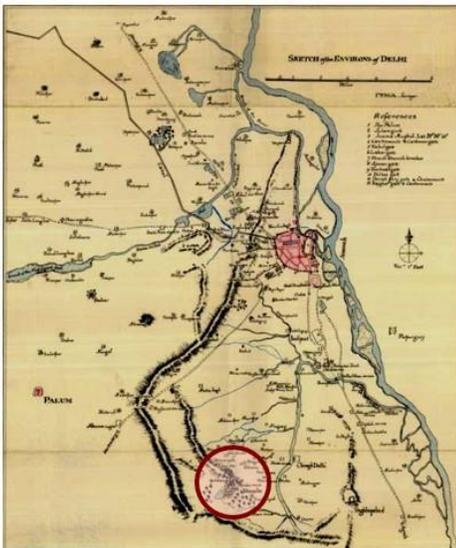
Case Study : Village- 'MEHRAULI' ARCHAEOLOGICAL PARK



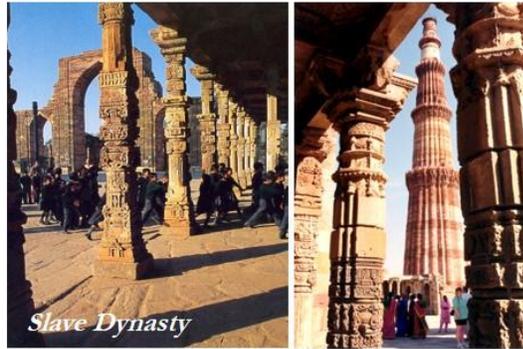
P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Mehrauli ... Historic Background

Sketch of Environs of Delhi 1807



Source: ASI

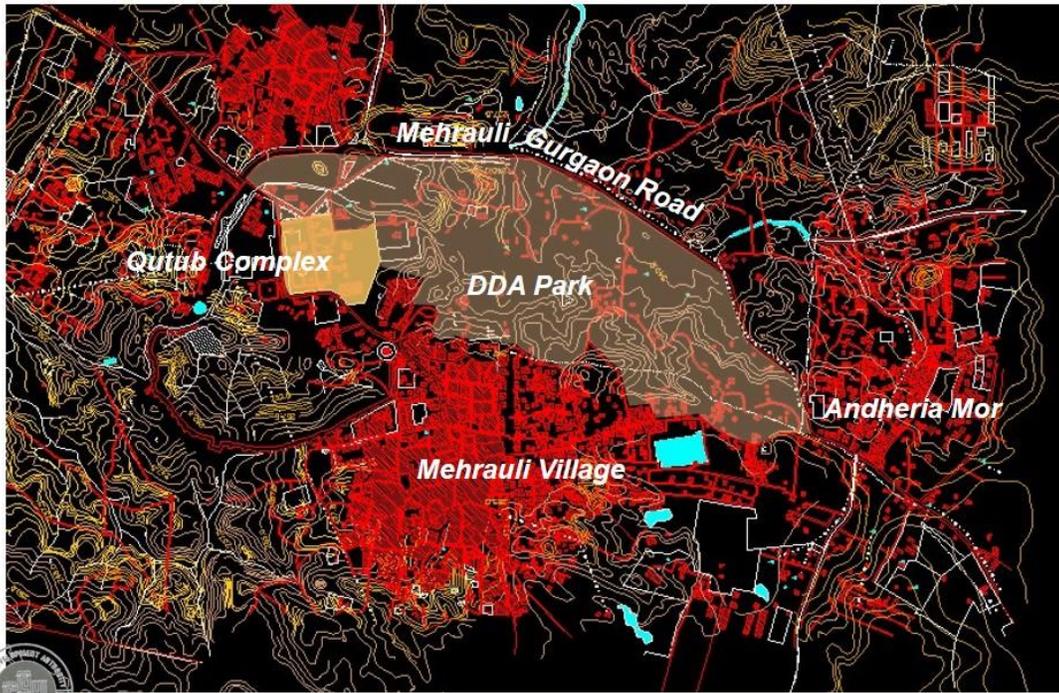


- Mehrauli a settlement that has evolved more than thousand years in succession
- Numerous major and minor historic monuments representing the architectural style of all major rulers of Delhi.
- UNESCO World Heritage Site also forms the part of this area.



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

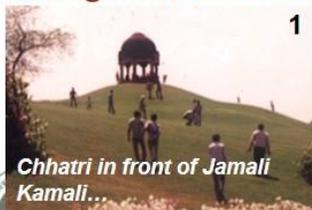
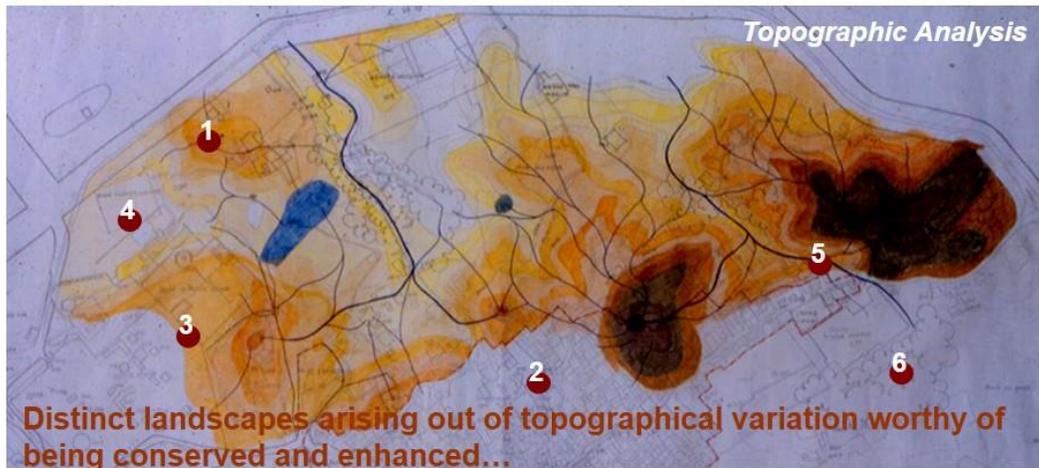
Extents of Site...



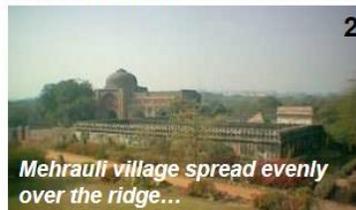
P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Site Potentials...

Physiography and Hydrology



1
Chhatri in front of Jamali Kamali...



2
Mehrauli village spread evenly over the ridge...

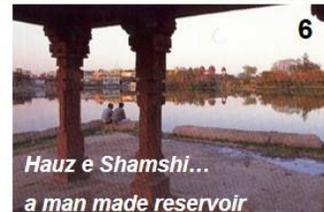
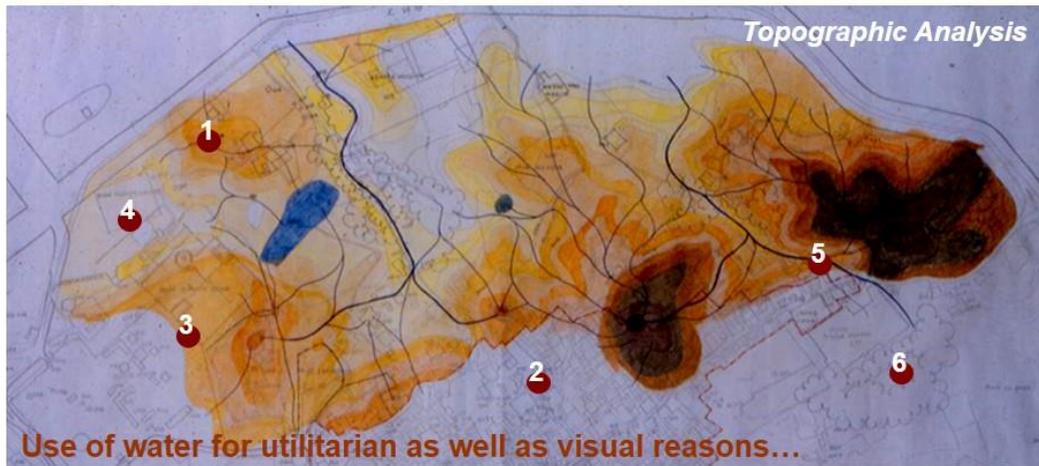


3
Quli Khan tomb & Qutub Complex sited over a plateau...

P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Site Potentials...

Physiography and Hydrology



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Site Potentials...

Vegetation



Historic orchards, formal gardens, fields and grazing lands, English landscape gardens, contemporary manicured gardens



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Site Potentials...

Historic Structures



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Issues...

Depleted Historic Environment caused by

- ◆ Decay of Historic Buildings
- ◆ Loss of fabric due to encroachment
 - ◆ Within the forest area
 - ◆ Of/ around historic buildings

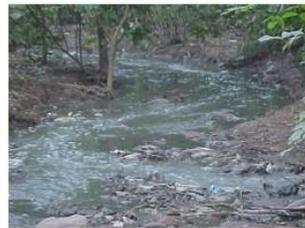


P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Issues...

Environmental degradation due to

- ◆ Loss of forest cover
- ◆ Lack of solid waste management
- ◆ Sewage in open natural drains
- ◆ Falling water table
- ◆ Defecation causing health hazards



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Cultural Resource Management Plan...

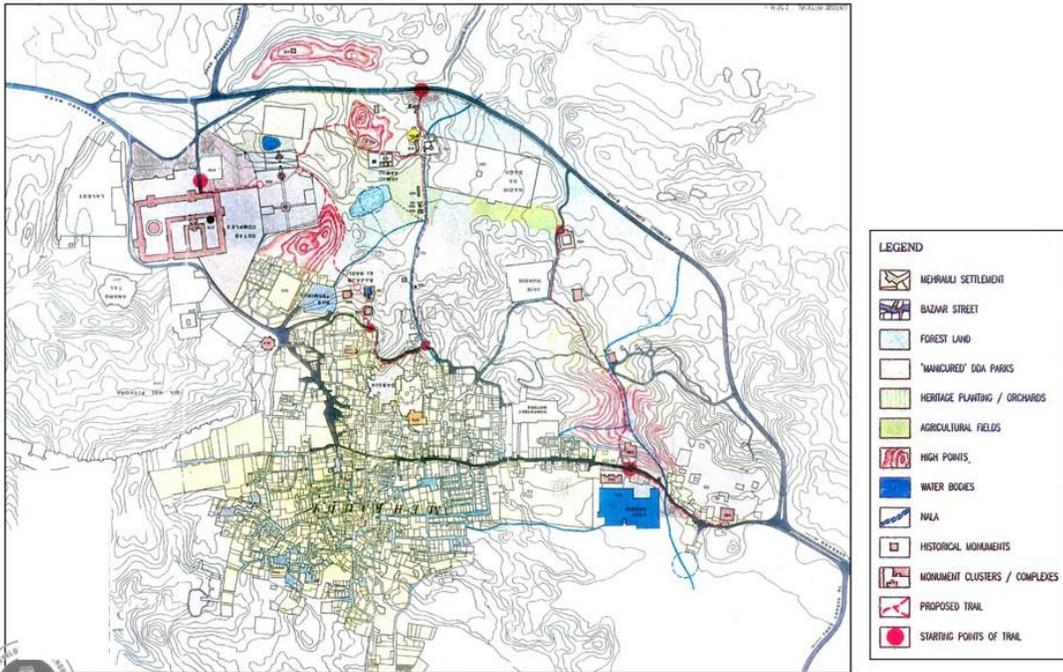


Approved in the third meeting of Delhi Urban Heritage Foundation (DUHF)

P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Heritage Trail...

INTACH in collaboration with DTTDC

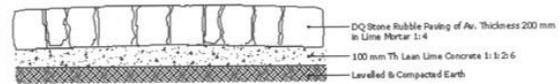


P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

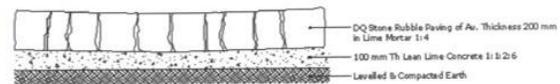
Heritage Trail...



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)



- The path has been raised or lowered in the center as required to allow proper drainage of rain water



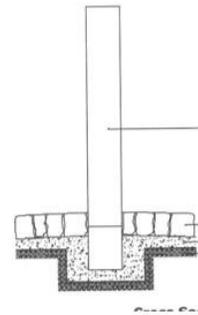
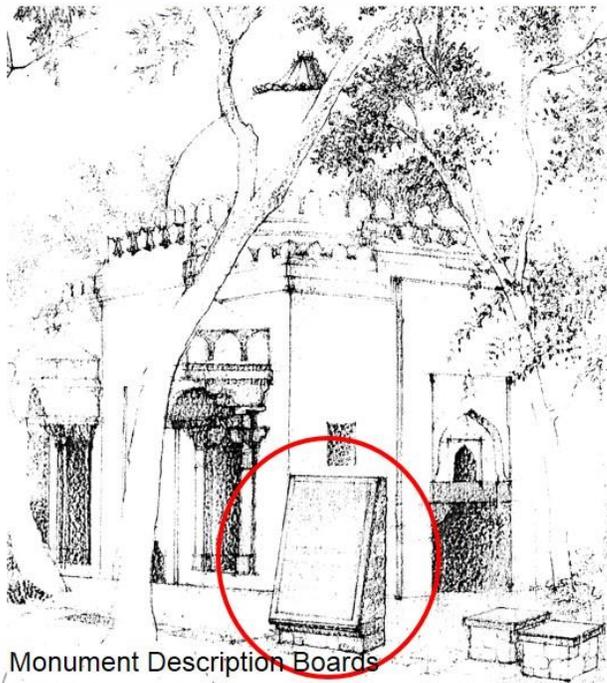
Detail 1: DQ stone paving

Detail 2: Red Sand Stone Paving



Detail 3: Leveled and Compacted Earth

Heritage Trail...

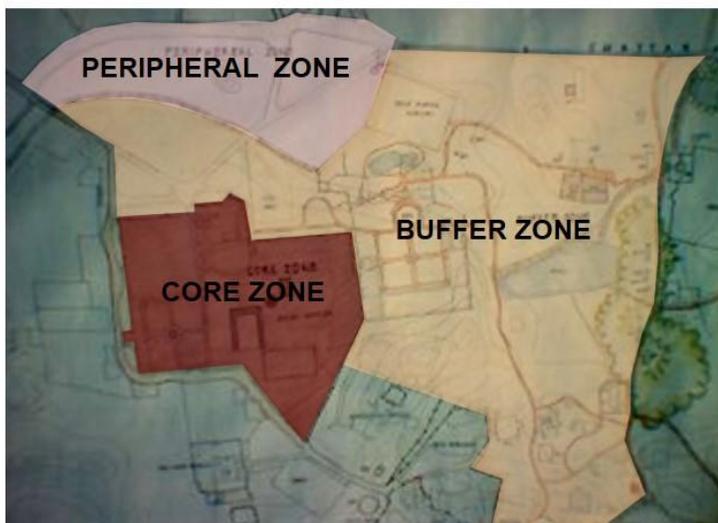


P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Entrance Areas...

Forecourt to Qutub Complex

The design approach designates three distinct zones:



Core Zone –
Monument area, where interventions would be minimal

Buffer Zone –
comprising of open landscapes and greenery as an area of transition

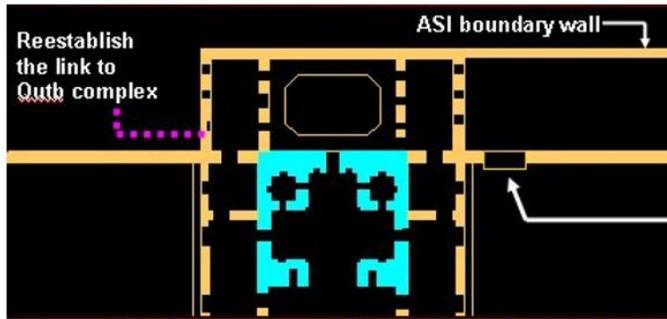
Peripheral Zone –
where interventions will be allowed to facilitate visitors but controlled to ensure harmony with the overall environment



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Redefining missing links...

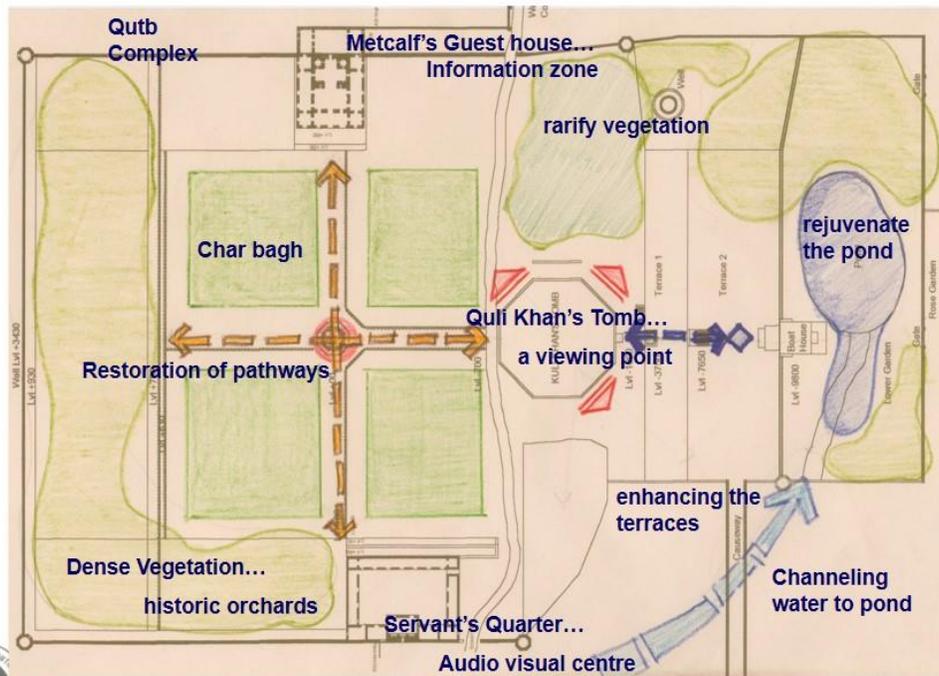
...existing openings closed



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

Redefining missing links...

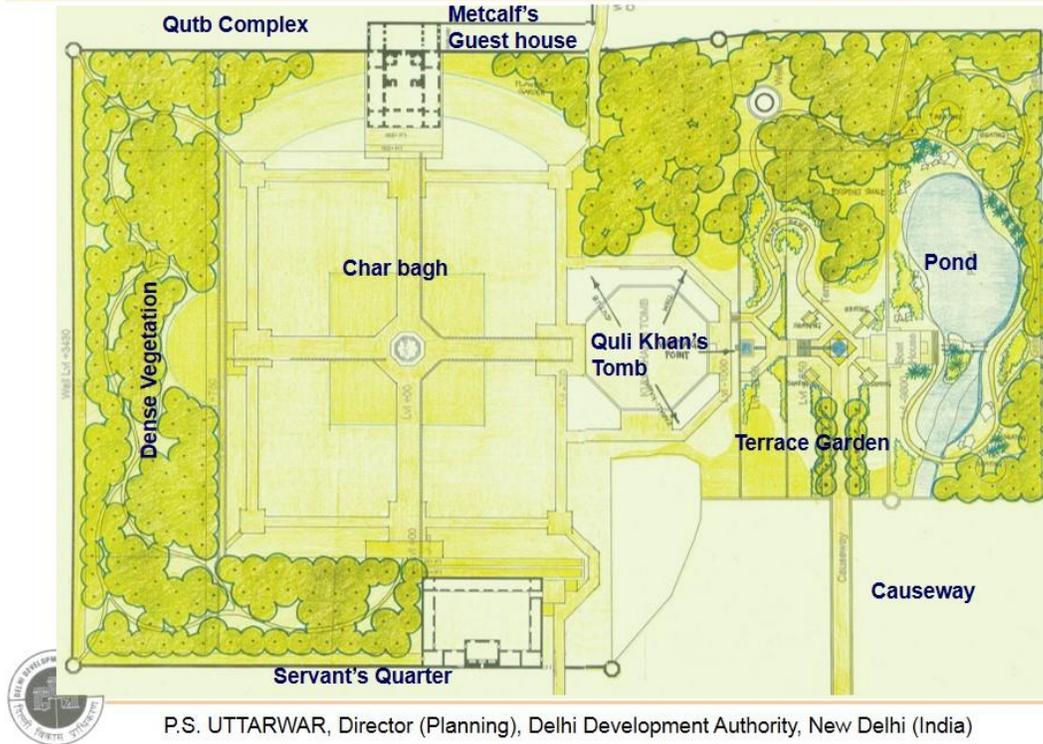
Concept



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

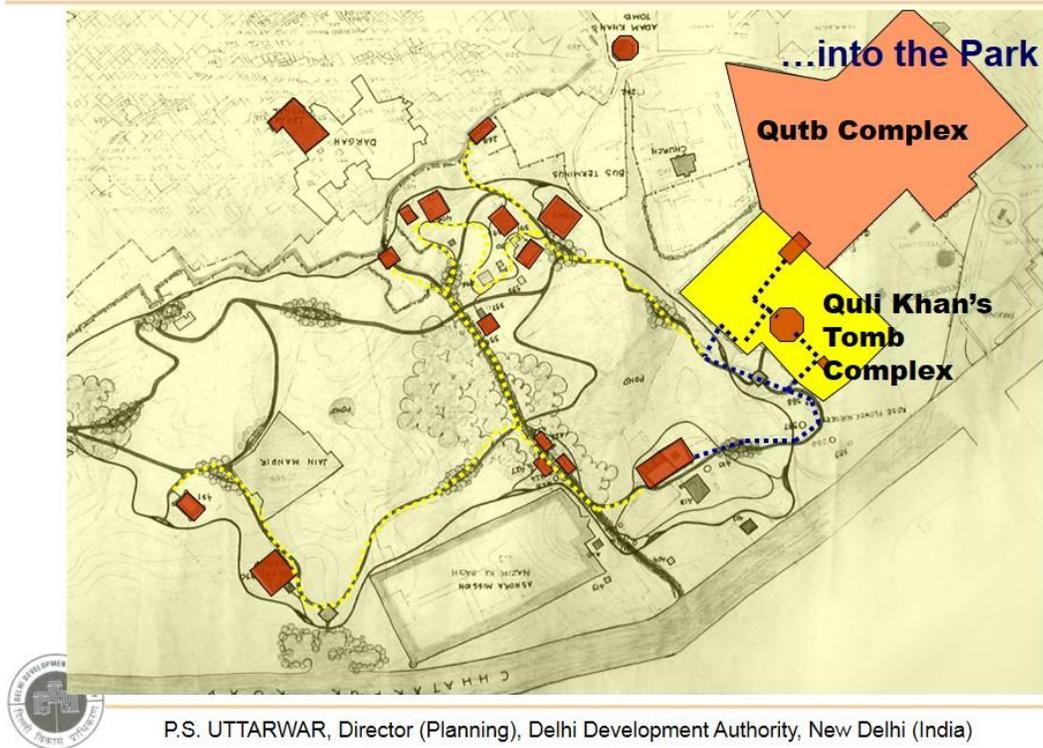
Redefining missing links...

Concept



Redefining missing links...

Proposal... Step V



Heritage Trial...



P.S. UTTARWAR, Director (Planning), Delhi Development Authority, New Delhi (India)

REFERENCES :

- 1) MASTER PLAN FOR DELHI 1962
- 2) MASTER PLAN FOR DELHI 2001
- 3) MASTER PLAN FOR DELHI 2021